SPECIAL! Multimedia with AmigaVision—p. 40

ANIM CONTEST II
Win Top Prizes!—p. 16

AMIGA WORLD

November 1990
U.S.A. $3.95
Canada $4.50
UK £2.50
An IDG Communications Publication



Games Galore!

- Top 20 Amiga Games of 1990
- 10 PD Favorites
- *Sneak Preview:* 15 Picks for '91

Plus!

Buyer's Guide To Amiga Networking

Photo-Compositing Hints & Tips

Reviews

- Saxon Publisher
- 3D Professional
- excellence 2.0
- MIDI Quest . . . *More!*

11
0 74470 65948 8

A Graphic Demonstration



Deluxe Paint III
has 32 colors* and costs $149.95.

Digi-Paint 3
gives you 4096 colors and costs $99.95.

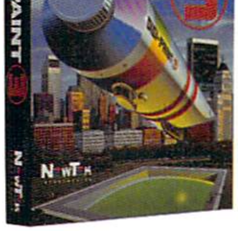
Get the picture?

Which one of the artistic tools pictured here would a child choose? The answer is obvious, the more colors the better. The choice is just as easy when it comes to Amiga paint programs. Digi-Paint 3 works in the Amiga's powerful Hold-And-Modify (HAM) mode which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 32 colors*. What does this mean to your Amiga art? Simply put, the program with more colors makes the better pictures. But that's just one of the reasons Digi-Paint 3 is the ultimate paint program.

Other advanced features found in Digi-Paint 3:

- 14 drawing modes including colorizing, range painting, and texture mapping
- Powerful tools including: magnify, rotate, cut-and-paste, and variable transparency
- Anti-aliased fonts give sharp edges and a crisp television look
- Paint on canvases up to 1024 x 1024 with auto-scrolling
- Supports ***all*** Amiga display modes and resolutions
- Compatible with the Amiga 3000 and WorkBench 2.0

AmigaWorld magazine recently compared the leading paint programs in a head-to-head showdown. A clear winner emerged: **"Digi-Paint 3 is the one to beat for speed, versatility and professional applications."** After six pages of detailed evaluations they concluded with, **"If you are really serious about owning only one paint program, we would have to recommend Digi-Paint 3."**

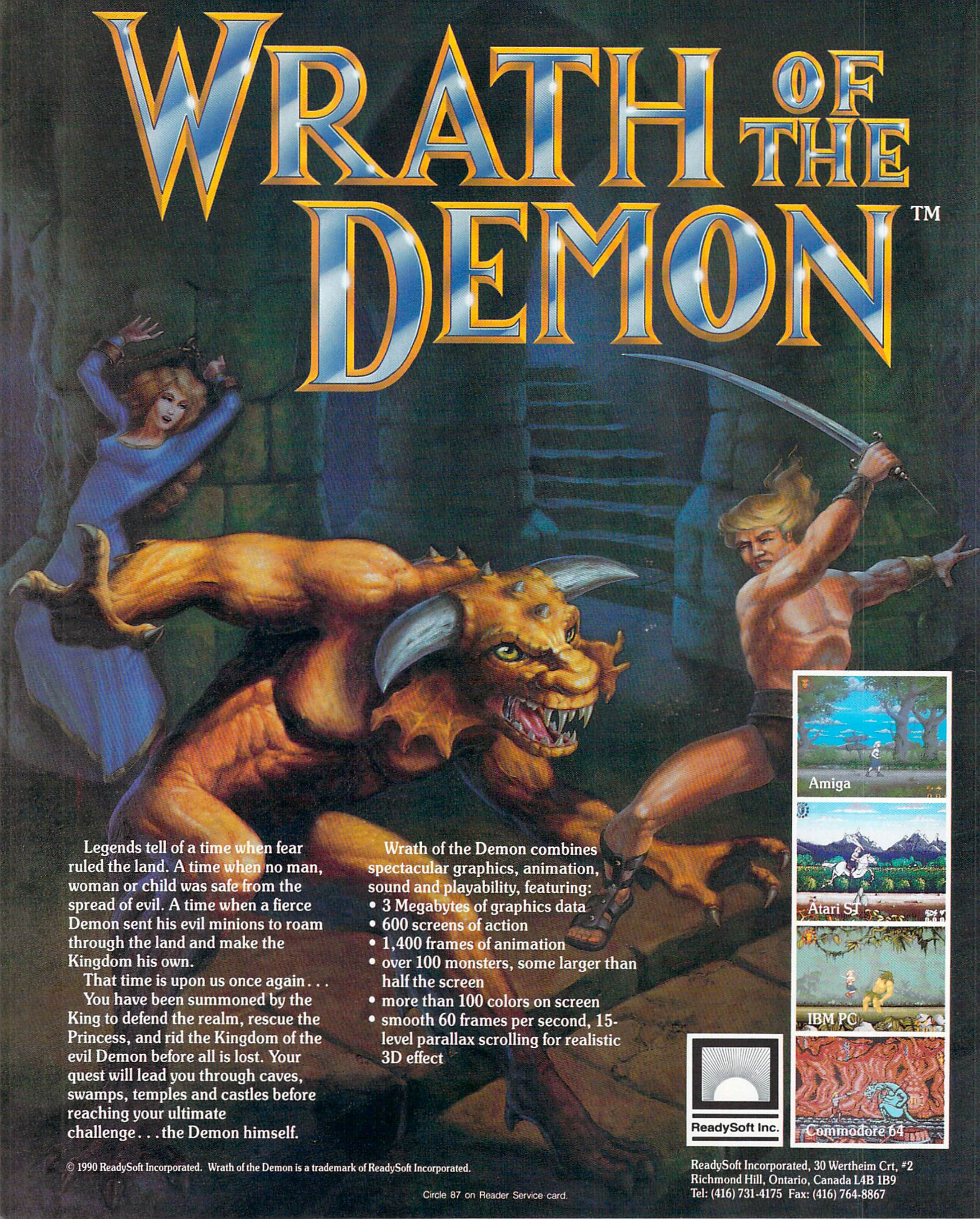


Digi-Paint 3 is available now at your local Amiga dealer **or call 1-800-843-8934** or 913-354-1146.

NEWTEK
INCORPORATED

Circle 102 on Reader Service card.

*In some modes an additional 32 half-intensity shades are available.


WRATH OF THE DEMON™
Legends tell of a time when fear ruled the land. A time when no man, woman or child was safe from the spread of evil. A time when a fierce Demon sent his evil minions to roam through the land and make the Kingdom his own.
That time is upon us once again . . .
You have been summoned by the King to defend the realm, rescue the Princess, and rid the Kingdom of the evil Demon before all is lost. Your quest will lead you through caves, swamps, temples and castles before reaching your ultimate challenge . . . the Demon himself.
Wrath of the Demon combines spectacular graphics, animation, sound and playability, featuring:
• 3 Megabytes of graphics data
• 600 screens of action
• 1,400 frames of animation
• over 100 monsters, some larger than half the screen
• more than 100 colors on screen
• smooth 60 frames per second, 15-level parallax scrolling for realistic 3D effect
Amiga
Atari ST
IBM PC
Commodore 64
ReadySoft Inc.
© 1990 ReadySoft Incorporated. Wrath of the Demon is a trademark of ReadySoft Incorporated.
ReadySoft Incorporated, 30 Wertheim Crt, #2
Richmond Hill, Ontario, Canada L4B 1B9
Tel: (416) 731-4175 Fax: (416) 764-8867
Circle 87 on Reader Service card.

VOLUME 6, NUMBER 11 NOVEMBER 1990

·C·O·N·T·E·N·T·S·

FEATURES

ARTICLES

COLUMNS



Maybe that puzzling proposition "The Child is father of the Man" explains why so many adults, as well as children, enjoy playing computer games. If not, the Amiga's superior graphics, animation, and sound capabilities will provide convincing secondary argument. In any event, you'll get no disagreement from us in this our annual Games Special!

DEPARTMENTS

REVIEWS

GAMES

ANIMATION CONTEST II—*WIN!*
Time is running out to submit your entries for inclusion in **The *AmigaWorld* Animation Video Volume II**. An **Amiga 3000**, a **Video Toaster**, and lots of other great prizes are waiting for you on **page 16**.

COVER PHOTOGRAPH BY ED JUDICE
SWORD COURTESY OF HIGGINS ARMORY STORE

STEPHEN ROBBINS, *Publisher*

DOUGLAS BARNEY, *Editor-In-Chief*
DANIEL SULLIVAN, *Executive Editor*
SWAIN PRATT, *Managing Editor*
LINDA BARRETT LAFLAMME, *Acquisitions Editor*
BARBARA GEFVERT TYSON, *Review Editor*
JANINE L. JACKSON, *New Products Editor*

LOUIS R. WALLACE, *Senior Editor, Technology*
Special Products Manager
TIM WALSH, *Technical Editor*
JOHN WOLFSKILL, *Senior Writer, Technology*
MARE-ANNE JARVELA, *Special Products Coordinator*

GENE BRAWN, DAVID T. MCCLELLAN
Contributing Editors

HOWARD G. HAPP, *Art Director*
LAURA JOHNSON, *Assistant Art Director*
ANN DILLON, *Designer*
ALANA KORDA, *Production Supervisor*

KENNETH BLAKEMAN, *National Advertising Sales Manager*
MICHAEL MCGOLDRICK, *Sales Representative*
BARBARA HOY, *Sales Representative*
HEATHER PAQUETTE, *Advertising Sales Representative,*
Partial pages & InfoMarket, 1-800-441-4403, 603-924-0100
MEREDITH BICKFORD, *Advertising Coordinator*
GIORGIO SALUTI, *Associate Publisher, West Coast Sales 1-415-363-5230*
2421 Broadway, Suite 200 Redwood City, CA 94063

WENDIE HAINES MARRO, *Marketing Director*
LAURA LIVINGSTON, *Marketing Coordinator*
MARGOT L. SWANSON, *Customer Service Representative;*
Advertising Assistant
LISA LAFLEUR, *Business and Operations Administrator*

MARY MCCOLE, *Publisher's Assistant*

SUSAN M. HANSHAW, *Circulation Director*
1-800-365-1364
PAM WILDER, *Assistant Circulation Manager*
LYNN LAGASSE, *Manufacturing Manager*

ROGER J. MURPHY, *President*
PAUL BOULE, *Vice President/Group Publisher*
JIM MCBRIAN, *Vice President/Group Publisher*
STEPHEN C. ROBBINS, *Vice President/Group Publisher*
DENNIS S. CHRISTENSEN, *Vice President of Manufacturing/Operations*
BONNIE WELSH-CARROLL, *Director of Corporate Circulation & Planning*
JEFFREY D. DETRAY, *Director of Technology Research*
LINDA RUTH, *Single Copy Sales Director*
DEBBIE WALSH, *Newsstand Promotion Manager*
WILLIAM M. BOYER, *Director of Credit Sales & Collections*
DOREEN MEANS, *Systems Coordinator*
DEBRA A. DAVIES, *Typographer*

AmigaWorld (ISSN 0883-2390) is an independent journal not connected with Commodore Business Machines, Inc. *AmigaWorld* is published monthly by IDG Communications/Peterborough, Inc., 80 Elm St., Peterborough, NH 03458. U.S. subscription rate is $29.97, one year; $46.00, two years; $64.00, three years. Canada $38.97 (U.S. funds), one year only. Mexico $38.97, Foreign Surface $49.97, Foreign Airmail $84.97 (prepayment is required on Foreign Surface and Airmail subscriptions in U.S. funds drawn on U.S. bank). All rates are one-year only. Second-class postage paid at Peterborough, NH, and at additional mailing offices. Phone: 603-924-0100.

Postmaster: Send address changes to *AmigaWorld*, Subscription Services, PO Box 58804, Boulder, CO 80322-8804. Nationally distributed by Kable News Co. *AmigaWorld* makes every effort to assure the accuracy of articles, listings and circuits published in the magazine. *AmigaWorld* assumes no responsibility for damages due to errors or omissions.

Beauty and Functionality Redefined

THE NEW IMPACT SERIES II™ A500-HD+

The Next Generation in Amiga® 500 Add-On Peripherals

IMPACT Series II

Turn your A500® into a Serious and More Fun Computing Tool Today!

GVP's New SERIES II A500-HD+ is The Ultimate in Hard Drive, Memory and Expandability for your Amiga 500. Major features include:

Leading Edge
Same high-tech custom VLSI and FAASTROM™ features as GVP's new Series II A2000 SCSI-RAM Products.

Foresight
Unique new "Mini-Slot"™ brings out all the A500 expansion bus signals, allowing for exciting future expansion options – the only intelligent alternative to risky "Pass-Through" functionality.

Reliability
Includes internal fan to keep you cool and robust power supply ensuring your A500 power supply will not be overloaded. GVP will not compromise on quality and reliability!

Memory Expansion
Internal RAM Expansion up to 8MB using easy-to-install SIMM memory modules.

Sleek
Custom injection-molded styling perfectly matches your A500 for unequaled beauty and elegance, setting a new standard for A500 peripherals.

State-of-the-Art
New 1″-high internal hard disk drive; available from 40MB through 100MB.

Performance
Provides no-compromise hard disk performance which until now has never been seen on the A500.

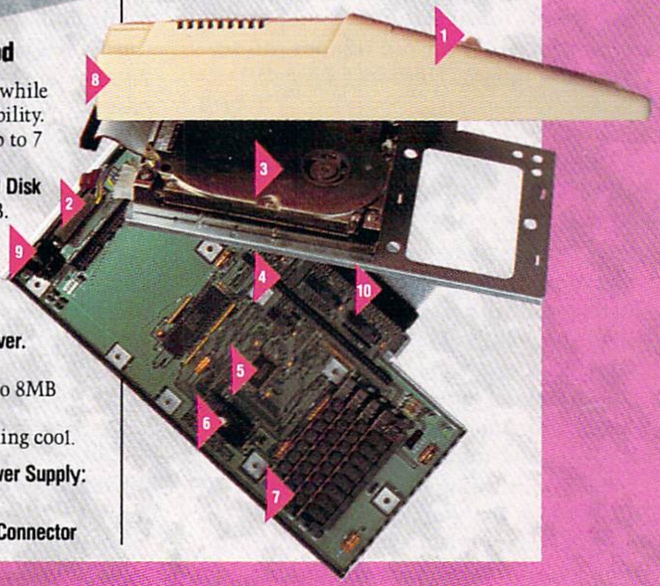
Seeing is Believing
Take one for a Test "Drive" at your nearest GVP Dealer today!

Call for Special End-User Trade-Up Details!



Take a Look under the Hood

1. **Game Switch:** Enables RAM while enabling full game compatibility.
2. **External SCSI Port:** Allows up to 7 SCSI devices to be attached.
3. **1″-High Factory-installed Hard Disk Drive:** 40MB through 100MB.
4. **"Mini-Slot":** For future expansion options.
5. **GVP's Custom VLSI Chip.**
6. **GVP's FAASTROM SCSI Driver.**
7. **Internal RAM Expansion:** Up to 8MB
8. **Internal Fan:** Keeps you running cool.
9. **Dedicated Universal Input Power Supply:** Included.
10. **Reinforced 86-PIN Card Edge Connector**



GVP

Educational pricing program now available.
Series II, FAASTROM and GVP are trademarks of Great Valley Products, Inc.
Amiga and A500 are registered trademarks of Commodore-Amiga, Inc.

GREAT VALLEY PRODUCTS INC.
600 Clark Avenue, King of Prussia, PA 19406
For more information, or for nearest dealer, call today. Dealer inquiries welcome.
Tel. (215) 337-8770 • FAX (215) 337-9922



CHIEF CONCERNS

Open the champagne! Have a cigar! We're celebrating a new arrival.

First of all, a word of thanks: Lou's been a hard-core laser-disc junkie ever since he got AmigaVision, and a couple of months ago he was poking around looking for laser discs. He managed to pick up a disc for the original Dragon's Lair arcade game, and soon had AmigaVision controlling its every move. Then, in planning this, our Games issue, we thought those images would work perfectly on the cover. One phone call, and we had permission to use it. So, many thanks to Sullivan Bluth Interactive Media, of Burbank, CA, successor to the Bluth Group Ltd. that did the original art and design for Dragon's Lair and Escape from Singe's Castle.

Now, have I got a surprise for you! I am turning over most of this month's column to our acquisitions editor, Linda Barrett Laflamme, who will tell you about a soon-to-be-launched new project. Fortunately (or unfortunately, depending upon your taste) my full column will return next month. Heeeere's Linda!!

—DB

Since *AmigaWorld* began, we've heard the plea, "Give us more technical information." Since *Transactor*'s demise, your pleas have escalated to clamors. So, we agreed at the annual strategy meeting to increase our programming coverage and boost the technical level of our other articles. Then someone brought in the overflowing box of letters from new users, all begging for more rudimentary articles. It turned out to be a long meeting.

But you're going to love the results. (I do, because I'm getting a new job.) *AmigaWorld* itself will continue on its current course, offering you the best all-around Amiga coverage. For those of you who want more hard-core programming and technical information, I'll be heading, not merely a new section, but a whole new publication—***The AmigaWorld Tech Journal.***

I've recruited the top technical talent of the Amiga community to share their insights, techniques, and algorithms for C, BASIC, assembly, Modula-2, and the operating system, plus advanced video, MIDI, and speech. Want to dig deeper into the OS and even write your own libraries? Read *The AmigaWorld Tech Journal*. Trying to get better results from your BASIC compiler? Consult *The AmigaWorld Tech Journal*. Need to set ARexx hooks and routines in your programs? Looking for public-domain programming tools? Struggling with timecode or converting your cable station to the Amiga? Yup, *The Tech Journal* will come to your rescue.

In addition to a full slate of tutorials (on such topics as porting your work to 2.0, debugging, and designing databases), each bimonthly issue will offer hot tips, news, and tools from the developers and networks, plus columns devoted to graphics programming, operating system routines and conventions, and more. Of course, I'm saving plenty of room for hardware and software reviews. Rather than do cursory looks at a multitude of products, however, the authors will delve deep into a select few, giving you detailed comparisons, benchmarks, and specs.

With so much to read, when will you find the time to type in all the sample listings or download the PD utilities? Never, because there's no need. While I'm riding herd on the articles, Mare-Anne Jarvela, our special products coordinator, will be compiling *The Tech Journal*'s companion disks. Thanks to creative packing techniques and her trusty archiving program, each disk will feature executable code, source code, and the required libraries or includes for all the example programs in the issue—plus the recommended PD utilities, demos of new commercial tools, and any other useful surprises that will fit. No, you don't have to fill out extra order forms or say the magic word; a disk is automatically bundled with every journal.

The first issue will hit dealer's shelves in March. Whether you are a developer, want to improve your programming skills, or just crave meaty information about your machine, you won't want to miss it. As soon as the circulation department catches up with the whirlwind enthusiasm here in editorial, we'll give you all the details on bringing *The AmigaWorld Tech Journal* directly to your mailbox.

As for my mailbox, I hope it fills up soon with more of your suggestions and requests. What would *you* like to learn more about from the pages of *The Tech Journal*? From which programmers and luminaries would you like to get tips? Have I forgotten an element you'd like to see on the disk? Reader surveys help us get started in the right direction. Continued reader input will help keep *The AmigaWorld Tech Journal* fresh and interesting, as well as authoritative and informative. So, to paraphrase Doug, "Keep clamoring!" I'll talk to you in March. ■

—LBL

REPARTEE

Comments, complaints, and concerns

from AmigaWorld *readers.*

GET PACKING!

In his article "Pack It In!" (Aug. '90, p. 46) Graham Kinsey states that GEnie polices uploads and filters out .ZIP files. He also seems to say that the Starship staff is doing this, and that people should demand that we stop.

Mr. Kinsey's statements are totally erroneous. We do not do this, never have, and probably never will. There are hundreds of .ZIP-archived files in the Starship libraries right now, and furthermore, I know of no GEnie roundtable that has an anti-ZIP policy. Kinsey should have checked the validity of his claim before printing such a ludicrous statement.

Rick Moyer
Address unknown

NAME CALLING

I take exception to Doug Barney's branding of Robert Morris as a jerk ("Chief Concerns," p. 6, Aug. '90). You and anyone else who is going to holler about the subject should know that Morris's program created a worm, not a virus. Viruses multiply and spread; worms do not. Further, a worm is not intended to destroy information or invade anyone's privacy, which is the sole purpose of a virus.

Had Morris been successful in perpetrating his prank, nobody would have noticed it. His mistake was in not testing his program properly. Also, had he not tried this prank, the system's vulnerability might never have been detected. Imagine what could happen if someone entered the system undetected and injected a real virus.

Robert Morris was guilty of creating chaos for a day and was punished properly. As for the estimated millions of dollars required to remove the worm, much of that work would have had to be done anyway to "close the back door" to the network.

If being a jerk is a prerequisite for being sent to the slammer, there may be a cell reserved for you.

Steven Duran
Albuquerque, NM

WHAT KIND OF DEAL?

Recently, *AmigaWorld* has talked a lot about the quality of dealers and what they should offer the customer. Your points are well taken and any true dealer (not box mover) would agree.

The problem is that your magazine makes it difficult for responsible dealers to exist. You accept advertising from anyone, whether or not they are authorized dealers. This means that although you say one thing regarding dealers, you endorse another—that is, to buy from the cheapest (not least-cost, mind you) place in town. Consumers who want value should look to a dealer who knows and understands the Amiga and its applications, offers pre- and post-sales support, training, and information updates.

I speak from experience. I had to give up my Amiga dealership because the customer was not willing to pay for value and service, and I could not make a living giving away the product at a few points above cost. Customers must pay a fair price to compensate quality dealers for the hours they put in to learn about and demonstrate hardware and software.

Thomas Gilligan
Scotch Plains, NJ

STAYIN' AHEAD

About two years ago, the name Amiga could be found only in Amiga-specific publications. These days, however, many PC and business magazines see the Amiga as a leader in many applications—especially multimedia.

No other computer can match the Amiga for combining graphics, sound, and animation. This lead is starting to disappear, however. Apple's Macintosh can display millions of colors in high resolution, while the Amiga is limited to 4096 in lo-res or interlace. Systems such as NeXT have 16-bit, CD-quality sound, compared to our eight-bit, four-voice output. In addition, the Amiga lacks support for CD-ROMs and technologies such as Intel's DVI (digital-video interactive system) and Phillips' CD-I.

It's time to enhance these features to give CBM a serious image and make the Amiga the multimedia champion.

Rainey W. Shelby
APO New York, NY

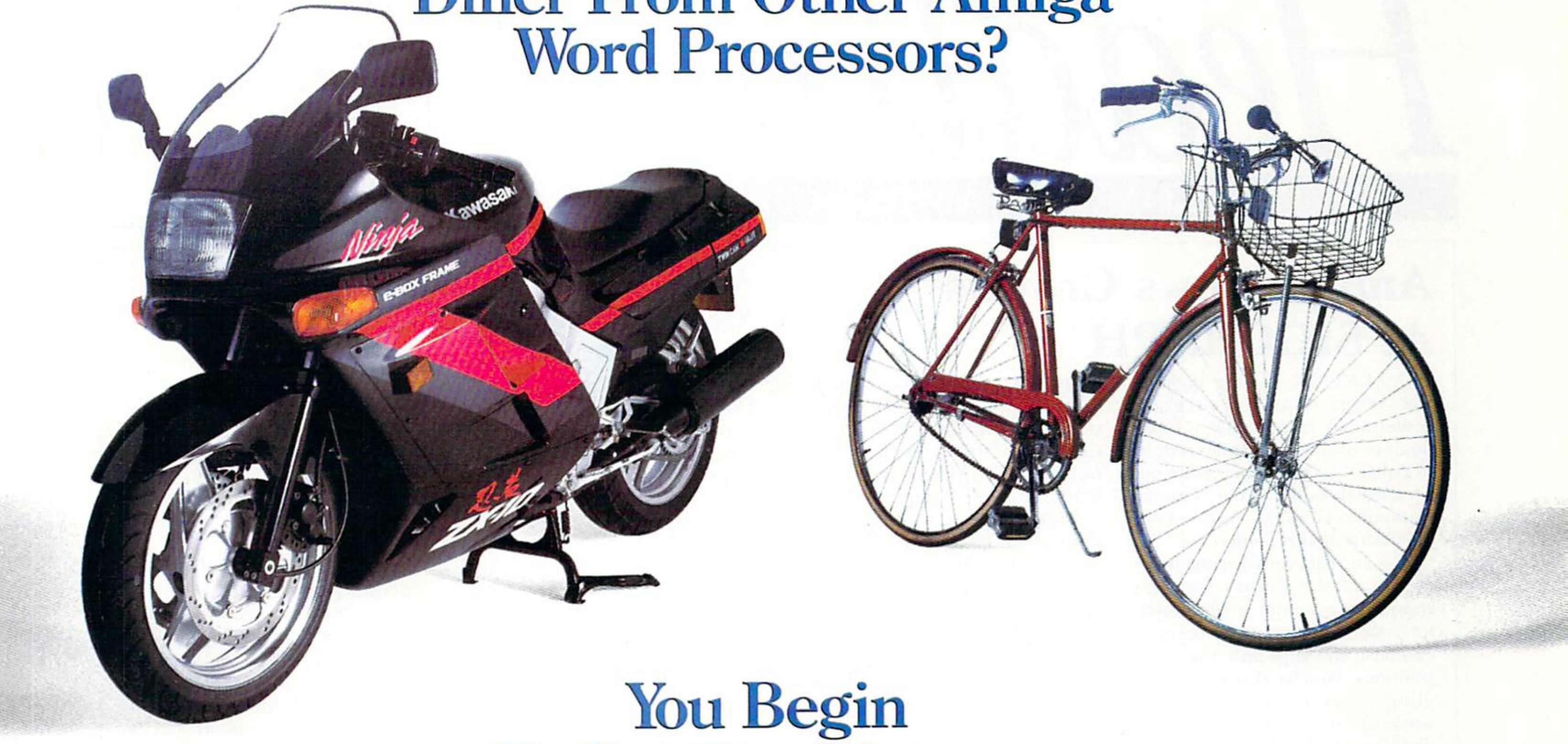
NOT MY JOB

I was not surprised to find Doug Barney whining once again about Commodore and the Amiga's problems, and what *we* as consumers should do about it. ("Chief Concerns," p. 6, Aug. '90.) I do not feel compelled to do Commodore's job of properly pushing the Amiga by writing such and such an organization. As Amiga owners, we have paid good money and have put up with the hassles that come with using this machine—isn't that enough?

Joseph Luppens
New York, NY

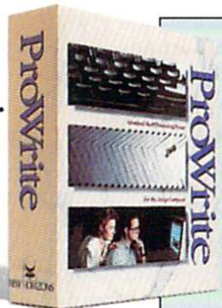
Send your letters to: Repartee, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. Letters may be edited for space and clarity. ■

How Does New ProWrite 3.0 Differ From Other Amiga Word Processors?



You Begin To Get The Picture.

Beneath Its Elegant Design Lies A Word Processing Powerhouse.



Ease into the solid comfort of the ProWrite environment. Zip in your text and briskly format with intuitive menu and ruler controls. Now slip into high gear using the power of keyboard commands. Deftly cut, copy and paste on the fly, knowing the formidable 100,000-word spelling checker is checking as you type, and the vast thesaurus is standing by with over 300,000 cross references to fine-tune your ideas. Graceful multiple columns are at your fingertips with choice of snaking or parallel text flow. If you're really into performance, you can tackle tedious tasks with the touch of an F-key using macros. For you power users, the AREXX port awaits you. And ProWrite's print merge feature eagerly churns out those form letters.

So Intuitive, So Responsive, You've Got To Experience It To Believe It.

Your thoughts pour effortlessly onto the screen, then just as fluidly out to your printer, virtually unaware of anything between you and the printed page. (After all, what good are all those features if they're a distraction to use?) Even your swiftest typing can't outrun it. Wrap your text around a graphic and you're ready for the home stretch. Now it's time to print and you've got control over your printer's dot density, aspect ratio, and paper size. And ProWrite can print your printer-resident fonts with graphics in Pica, Elite, Condensed, and Wide—all on the same page. With ProWrite's flexibility, you can smooth out any rough spots—no matter what kind of printer you have.



With all these performance features and more, ProWrite stands in a class by itself as your power performer. And best of all, it stands on the shelf now at your favorite store.

Features

- Spelling checker with 100,000 word dictionary
- Spell check all at once or as you type
- Multiple columns with snaking or parallel text flow
- Thesaurus with over 300,000 cross references
- Print merge
- Import any IFF or HAM pictures
- Wrap text around pictures
- Multiple line headers and footers with Title Page option
- Macros, when used with AREXX
- AREXX port
- Hyphenate words with soft hyphens
- Tabs with left, center, right, or decimal alignment
- Defineable decimal tab alignment character
- Prints color or black and white printer-resident fonts and pictures at the same time
- Prints printer-resident fonts with any variety of Pica, Elite, Condensed, and Wide fonts at the same time
- Prints on any Preferences-based printer
- True "What you see is what you get" display
- Multiple fonts, sizes, styles, and colors
- Adjustable defaults for *all* program settings
- Comprehensive keyboard equivalents
- Select All command for document-wide changes
- Go to any page on command
- User-definable dictionary
- Up to ten documents can be open at once
- Undo and Redo commands
- Adjustable page sizes
- Print sideways or across paper perforation
- Print documents back-to-front, separate odd-even, or collated
- Line spacing in single, one and one half, and double
- Print to PostScript using optional PostScript module
- Adjust printer dot density
- Adjustable top, bottom, left, right, and binding margins
- Reduce or enlarge documents in one percent increments
- Adjust line spacing in one point increments
- Automatic space before and/or after paragraphs
- Automatic word look up
- Automatic page numbering with choice of five different formats
- Sort paragraphs from A to Z or Z to A
- Character, word, sentence, line, paragraph, picture, and page counts
- Six different date formats and two different time formats
- Computes average word and sentence length and readability grade level
- Insert current date and time either as fixed text or as an updating marker

Circle 38 on Reader Service card.

NEW HORIZONS

First In Personal Productivity And Creativity

New Horizons Software, Inc.
206 Wild Basin Road, Suite 109, Austin, Texas 78746
(512) 328-6650

Headliners

NEWS FROM THE AMIGA COMMUNITY

Forecast:
Sunny (see report of Dallas SIGGRAPH conference)

Amiga Wows Crowds At SIGGRAPH

DALLAS, TX—Riding high on the Amiga's sudden surge in professional respectability, Commodore Business Machines rode in to Dallas Aug. 6–10 to make an impressive showing at the National Computer Graphics Association's 1990 SIGGRAPH conference.

The annual event attracts up to 30,000 of the world's foremost computer graphics professionals for a week of seminars, technical exhibits, and film and video expositions. Amidst this mind-boggling array of state-of-the-art workstations and high resolution displays, the Amiga has traditionally been cast as an also-ran. But with Commodore packing powerful A3000s, 2500/30s, Amiga UNIX, CDTV, and AmigaVision into its booth, conference attendees were forced to take notice.

The Amiga was also represented by third-party developers whose products promise to thrust the computer into the forefront of the graphics world. Impulse, for example, demonstrated its new 24-bit display card, Firecracker 24, available in two configurations that offer resolutions up to 1024 x 482. Impulse also unveiled its follow-up to the Turbo Silver 3-D modeler—Imagine.

Hash Enterprises demonstrated Animation:Journeyman, a unique 3-D product aimed at the professional market, while Walt Disney Computer Software got things moving with The Animation Studio.

ASDG and Active Circuits showed off their 24-bit graphics solutions for the print and video markets, emphasizing the Amiga's ability to communicate with existing graphics hardware, such as Sharp's color scanners and Truevision's Targa and Vista-series display cards.

Elsewhere at the show, the University of Lowell demonstrated its 256-color, high-resolution display card, which, they announced, Commodore will be shipping by year's end. In its own impressive booth, Newtek continued to wow the crowds with its amazing Video Toaster. The company startled many observers by announcing its intention to bundle Allen Hastings' new animation program, Lightwave 3D, with the $1595 Toaster at no extra charge.

At SIGGRAPH, where most animation systems begin in the $60,000 range, attendees like to get a glimpse of the future. After this show, many believe the future is the affordable Amiga.

—Rick Rodriguez

A3000 Takes Off into Space

WEST CHESTER, PA—Commodore is conquering space with a new version of the Amiga 3000. How? By shipping upgraded machines with 25 percent more hard-disk storage space.

Commodore, which had been equipping the A3000 with a 40-megabyte hard disk, upped the standard equipment to 50 megs in mid-August without increasing the price of the machine. "In light of the sophisticated graphics, animation, and video applications currently available, providing users with increased storage capacities is a priority," explained Walt Simpson, Commodore's Director of Product Marketing.

According to Simpson, Commodore has received tremendous response to the new configuration from both dealers and customers. In fact, initial A3000 orders have exceeded the company's forecasts.

—BGT

Amiga Wins Virginia Tech: Move Over, Mac

BLACKSBURG, VA—Virginia Polytechnic Institute and State University has, for the last three years, required incoming computer-science majors to purchase Apple's Macintosh with A/UX. Not any more. After seeing the power and capabilities of an Amiga 3000 running AT&T's UNIX System V.4, university officials have switched allegiance.

"Commodore's UNIX passed every one of our tests," said Dr. James Arthur, chairman of the Virginia Tech computer-science department's selection committee. "From the Amiga technology to V.4 delivery to the Amiga's unbeatable price, Amiga UNIX was the clear choice for our department. We're also very pleased with Commodore's willingness to work closely with us to produce a solution tailored to our needs."

"This is a significant win for Commodore," boasted CBM Director of Education Howard Diamond. Virginia Tech's purchase came during the A3000 UNIX beta-test phase, in the midst of preparations for the product's worldwide launch.

Virginia Tech chose UNIX as its operating-system standard because UNIX is a good environment in which to experiment. Also, because it is largely platform independent, it allows the exchange of information between diverse hardware systems—an essential factor for computer science. UNIX V.4, which many expect to become the standard, integrates all the features of the various UNIX technologies.

—BGT

CBM Machines Hold Government Posts

RESTON, VA—SMS Data Products Group, a Commodore distributor, was awarded a federal-government contract in August. "For years we've been sayng that Commodore's product lines are ideal for government users," said SMS President Bert Rosecan.

SMS's schedule includes both Amiga workstations and Commodore Intel 80286/386 PCs. Randall Griffin, Director of the Reston-based Commodore Federal Systems Group, said that with this achievement, Commodore is beginning to strengthen its presence in the federal market.

Griffin said that the Amiga is receiving a warm welcome from government agencies. The Navy and NASA in particular, he noted, appreciate the Amiga's graphics prowess for engineering, graphics, and simulation applications.

—BGT

The Show-me Dates

The Amiga will be appearing at a number of consumer/trade shows throughout November. For details on the following shows, call the numbers listed.

Nov. 8–12
Amiga '90
Cologne, W. Germany
914/741-6500

Nov. 12–16
Comdex
Las Vegas, NV
617/449-6600

Nov. 26–30
Video Expo Orlando
Orlando, FL
914/328-9157
800/248-KIPI

Nov. 30–Dec. 2
World of Commodore/Amiga
Toronto, Ont., Canada
416/595-5906



Nexus is a unique combination of state-of-the-art hardware and software designed to meet your current and future storage needs.

The Nexus features a high performance SCSI interface, 4 megabytes of memory expansion, space for a 3.5" hard drive and the most complete storage software ever assembled. The Nexus is fully compatible with Amiga 2000 and 3000 series computer systems, the PC Bridgeboard and the A-Max emulator.

Easy To Install

You can install Nexus in your Amiga in a matter of minutes. To make the installation completely effortless, Nexus includes intuitive configuration software. The easy to follow instructions take you step-by-step to a successful installation.

1-800 Customer Service

When you need help for any reason, we are just a toll-free phone call away. When you call you will talk to a knowledgeable person who cares about you and who will go to any length to assure your satisfaction.

Exclusive 5 Year Warranty

Nexus is superbly engineered and uses only the finest components to give you many years of trouble free operation. We stand behind our products by offering an exclusive 5 year warranty on parts and labor.

Focus On Storage Systems

By focusing our development exclusively on storage systems, we deliver complete storage solutions and not just a hodgepodge of hardware components.

Nexus Hardware

A high degree of component integration allows the Nexus to combine a SCSI interface, a 3.5" hard drive and 4 megabytes of memory on a single card. Mounting your 3.5" hard drive directly on the card leaves your drive bay open for future expansion.

High Performance SCSI Interface

Nexus uses an innovative SCSI design, giving you the vast storage of a hard disk, while simultaneously approaching the speed of a RAM disk. Imagine reading from your hard disk the equivalent of an 880,000 byte Amiga diskette in less than one second.

Memory Expansion

Nexus gives your application software more room to work by adding 2 or 4 megabytes of memory to your Amiga. You can add memory to the card using easy to install single in-line memory modules (SIMMs). Save a valuable expansion slot by avoiding the use of a dedicated memory card.

Unlimited Storage Options

Nexus lets you make the right choice for your storage needs by supporting a variety of SCSI drives including streaming tape, removable cartridge, erasable optical, DAT and CD-ROM.

Nexus Software

Nexus is more than just a superb piece of hardware. Nexus includes the most complete storage software available for the Amiga.

FlashBack

Protect your valuable data by performing regular backups using our convenient FlashBack software. FlashBack lets you select files for backup using the mouse and can save files to any storage device including diskette and streaming tape.

PowerBench

With its intuitive user interface, PowerBench lets you take charge of your Amiga. Click on a graphics file to see it, a sound file to play it, a text file to read it and that's only the beginning.

SmartCache

Intelligent caching improves performance and extends the life of your hard drive. SmartCache speeds up data access by using a specified portion of memory to store frequently used information.

SpoolIt

Any data sent to the printer is captured and saved on disk. SpoolIt prints the data in the background while you continue to use your application software.

DiskSurgeon

Undelete a file that was accidentally deleted. Do a media analysis to locate and map out bad blocks or potentially bad blocks. Improve hard disk performance by reorganizing the disk to remove fragmentation and to make files contiguous.

InstantFormat

Our formatting and partitioning software sets a new standard for ease of use. With the click of a few buttons you can format any SCSI hard drive instantly.

MemoryDoctor

Memory diagnostic software verifies the proper operation of your expansion memory. The MemoryDoctor program uses a graphics display to show which components, if any, need to be replaced.

Order Nexus Today

The Nexus hardware/software package is an outstanding value at a retail price of $349. Nexus is available from your local dealer or by calling **1-800-878-0010**. Dealer inquiries invited.

Nexus options include SideWinder 250, HardPack 44, LaserDrive, SubSystem/SCSI, Advanced Hard Drives and Advanced Accessories.

ADVANCED
STORAGE SYSTEMS

A Division of Preferred Technologies, Inc.
14540 East Beltwood Parkway
Dallas, Texas 75244 U.S.A.

Telephone (214) 702-9191
Facsimile (214) 702-9203
Sales (800) 878-0010
Customer Service (800) 878-6006

Circle 5 on Reader Service card.

Making It Big With Amiga Graphics

CHEYENNE, WY—Trained in the fine arts, Dean Johnson first became interested in the computer as an artistic tool when he was exposed to the Amiga. After purchasing an A500, Johnson soon realized that for his purposes, his greatest limitation was the lack of viable hard-copy options. Instead of buying a high-end printer or plotter, he decided to build his own.

Following a crash course in robotics, Johnson began to design and assemble a robotic airbrush to run from his Amiga. One year later, he had a "printer" capable of painting Amiga images on any flat surface—from a mere 16×20 inches to a gigantic 6×9 feet!

Dean begins his creations using a bitmap paint program. Then, using software that he and his friend Ross Hilman wrote, Johnson converts the IFF file to ASCII format. Another program, written by Hilman, reads the ASCII file, controls the stepper motors and airbrush solenoid, and drives the airbrush to spray paint onto the canvas, wood panel, paper, or whatever. Because the airbrush applies paint one color at a time, it must make a number of passes to complete a multicolored image.

Johnson not only creates his own works with the Amiga, but he also uses Amiga systems to teach computer-graphics courses at Laramie County Community College in Cheyenne.

—BGT



From screen to canvas, via Dean Johnson's robotic airbrush.

Happy Trails

EASTERN EUROPE—Just like Charles Kuralt, Commodore has been hitting the road. But instead of driving around in a camper looking for human interest stories, Commodore Electronics Ltd., a division devoted exclusively to spreading the word in developing nations, has managed to stage Commodore-only consumer shows throughout the year in Hungary, Poland, Czechoslovakia, and Yugoslavia. "We've been very successful," CEL Marketing Manager Gregory Koler reported. He added the observation that these product-awareness shows have sparked sales to a considerable extent.

The tour showcases Amiga applications in exhibits and seminars, covering such topics as desktop publishing, video, graphic design, interactive computer training, and hyper-media.

CEL is catering predominantly to private enterprises—to architects for CAD applications, to artists who design fabrics, and even to medical institutions dabbling in signal processing.

"The interesting thing about the Eastern bloc is that we have a whole generation that has not had an opportunity to be exposed to computers," Koler said. From this, Commodore is building a new loyalty, he added. With the seeds CEL has planted in Eastern Europe, it plans to gradually nurture success from the ground up.

—J. Jackson

Masters of the Airwaves

TUSCON, AZ—You'll find him deep in a basement, in either of two 5×12-foot rooms. Is he a key character in a dungeon-escape game? No; Mike Masters is a computer-graphics specialist at TPAC, the Tuscon Public Arts Channel.

He is also a self-proclaimed cartoon fanatic and power-Amiga user—which is fortunate, because TPAC is an all-Amiga cable station. The station started out with an A2000, sporting a 20MB hard disk and 9MB of RAM. Now there are two such beasts at TPAC keeping company with a 4.5-meg A500 and a 5-meg A2500 with a 40MB hard disk. "We love our memory," quips Mike.

Since April '88, the station has used Amigas to inform the community of upcoming dance, theatre, music, gallery, and museum events. According to Masters, his mission is to add flash and color to otherwise flat, sterile images. "When I came on, I wanted to give (the station) a splashy look," he explained. His two right-hand assistants are Zuma Group's TV* Show and Electronic Arts' DeluxePaint III.

TPAC resides at Pima Community College, where communications students help run the station. The students learn basic animation and titling under Mike's supervision. What do the students think of the Amiga? "I can usually impress them very quickly," reports the satisfied Mike.

—J. Jackson

That's Insurance!

NEW YORK, NY—With a goal of establishing a presence in every state within five years, Bowers, Schumann & Welch, one of the country's largest insurance agencies, needed help. One step toward that goal was to set up a standardized employee-training environment to quickly get new agencies up and running.

It set its sights on interactive computerized training systems, and one of the firm's employees knew of Future Touch's touch-screen monitor for the Amiga. "So BS&W contacted us," beamed Ed Kalbaugh, a partner in Future Touch, Inc., a division of Amigo Business Computers, of East Northport, NY.

Because the project was so immense, Amigo and Future Touch in turn called on Commodore for assistance. CBM responded by loaning eight systems (each comprised of an A2500/30 with a 40MB hard disk, five megs of RAM, an A2300 genlock, a Pioneer 4200 laser-disc player, and a Future Touch touch-screen monitor) and providing a beta copy of AmigaVision, Commodore's new, multimedia authoring software. Thus equipped, a project director, two graphics people, two AmigaVision programmers, and a part-time hardware specialist set to work (also using TV*Text Professional, DeluxePaint III, and PageRender 3D) and completed the project in two months.

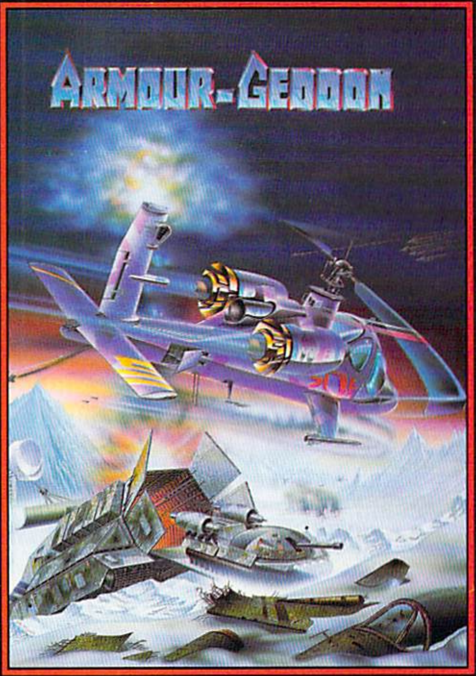
"That's something we never could have accomplished with traditional programming," reasoned Kalbaugh. With AmigaVision, you can easily assemble the pieces of a project that other people complete, he said. Assembling pieces of code, added Kalbaugh, is not so easy, and the overhead—with code and library maintenance—is great. Another compelling reason for using AmigaVision is that, because it is so easy to use, it allows BS&W the option of updating the training program without outside help.

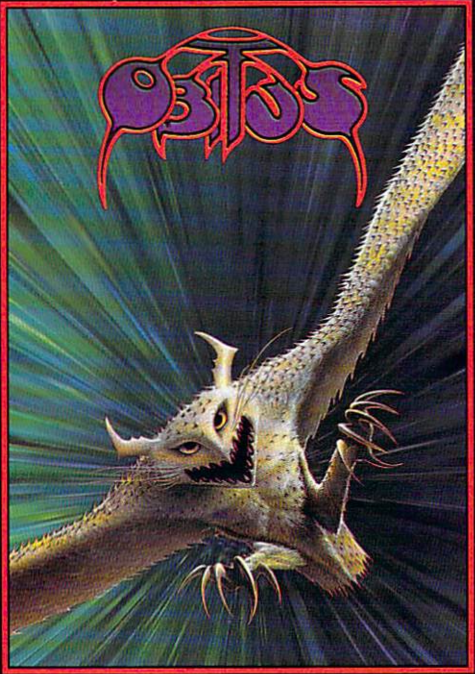
"This is the first time I have seen a company approach training from a total, corporate-wide perspective," noted Kalbaugh, who also runs a management-consulting firm. "This program is geared for everyone—from the boardroom to the mail room." He explained that the interface is akin to an organizational flowchart: An employee touches a series of icons to arrive at a full-motion video or graphic accompanied by full-stereo sound. The system is not only helpful for training; it also serves as a standard reference for employees to refresh their knowledge.

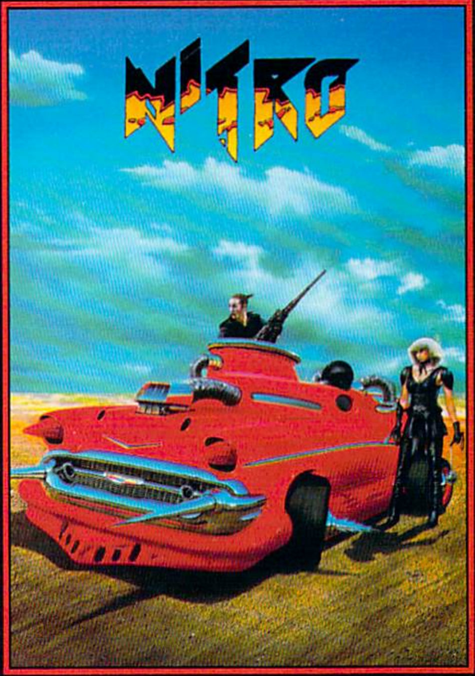
BS&W is currently negotiating with Commodore to purchase 1000 Amigas. "The significance of this project," says Kalbaugh, "is that if all goes as anticipated, The Amiga will substantially penetrate a significant market." Phase 2 of BS&W's plan is to network the machines using the existing equipment, and Phase 3 is to network the Amigas via Unix.

—BGT

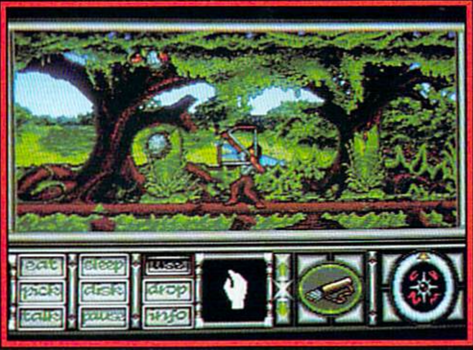
Headliners is compiled by Barbara Gefvert Tyson. Send your news bits to Headliners, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458. ■













ARMOUR-GEDDON

Post-Holocaust: A power crazed entity desires control of earth. They develop an energy beam and intend to bounce it off a custom-built satellite back to earth. All unprotected life will be wiped out.

You select and control up to six diverse hi-tech vehicles at once in a race against time to seek and destroy enemy power lines and eventually knock out their beam generator.

Build up your arsenal by collecting enemy resources to help develop and create your own new weapon systems.

Featuring a sophisticated head-to-head serial link enabling 'being-there' realism between two players.

Armour-Geddon: Strategy and simulation synthesized to perfection.

Screen Shots from the Amiga version.
COMING SOON ON THE PSYGNOSIS LABEL

OBITUS

You're in the depths of your own worst nightmare . . . but this time there's no waking up.

Lost and alone in a dangerous and alien world you must discover where you are, how you got there . . . and how you're going to get out!

In a frantic search of the unfamiliar land you explore aMAZEing forests, mines and underground complexes collecting objects and interacting with indigenous creatures.

Re-emerging into daylight you race along perfect parallax action scenes, dispatching enemies as you battle ever deeper into the unknown.

Impelling RPG with more than a dash of hack-'n'-slash.

Screen Shots from the Amiga version.
COMING SOON ON THE PSYGNOSIS LABEL

NITRO

Choose your car, grab the wheel and go!

Speed through the cities, deserts, forests and wastelands competing in over 30 gruelling races - day *and* night in a mad dash for the finishing post!

Race against the computer or friends.

Pop in the shop to enhance or repair your machine.

Pedal-to-the-metal fun!
Squeals on wheels!
Lead – free frolics!

Screen Shots from the Amiga version.
AVAILABLE ON THE PSYGNOSIS LABEL

PSYGNOSIS
29 Saint Mary's Court,
Brookline, MA 02146
Telephone: (617) 731-3553
Fax: (617) 731-8379

Armour-Geddon	Amiga
Obitus	Amiga
Nitro	Amiga

PSYGNOSIS

Circle 311 on Reader Service card.

Supra Corporation



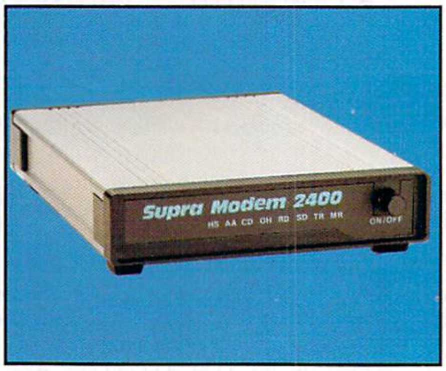
Makes Your Amiga Even Better



SupraDrive™ Floppy
Quiet, reliable floppy disk drive works with all Amiga® computers. 1MB unformatted capacity. Pass-through port for connecting additional drives.



SupraDrive™ Removable
Syquest™ removable cartridge drive for the A500 or 2000. Great for primary & back-up storage. Comes complete with SCSI interface, or as add-on drive.

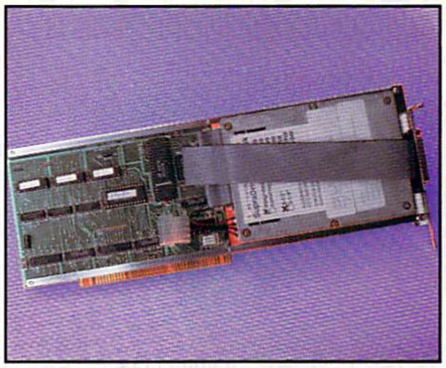


SupraModem™ 2400
100% Hayes™-compatible 300, 1200, 2400 baud modem for virtually all computers. Compatible with all popular telecommunications software.



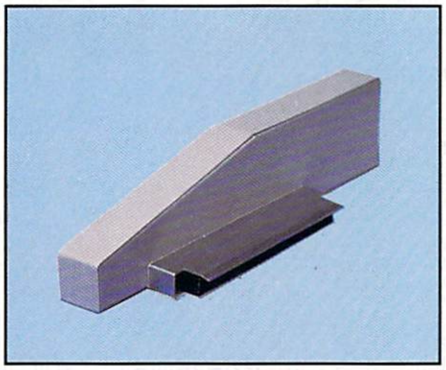
SupraDrive™ 500XP

Micro-power hard drive, SCSI interface, & RAM for the A500. Easily expands from 1/2 to 8MB RAM. Includes Amiga bus pass-through, SCSI port, software.



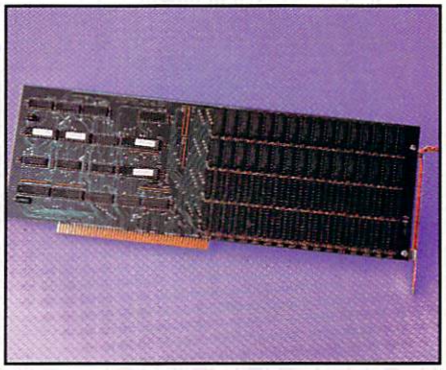
SupraDrive™ WordSync™

Easy-to-install, autobooting hard disk card for the Amiga 2000. Uses high-performance Quantum™ hard disk & includes SCSI port, utility software.



SupraRAM™ 500RX

1/2, 1, 2, 4, or 8MB of FAST RAM for the Amiga 500. Easy to expand. Zero wait states & hidden refresh. Amiga bus pass-through.



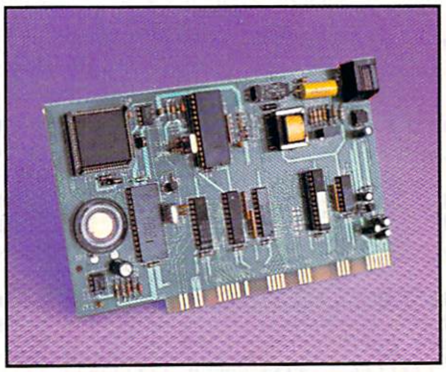
SupraRAM™ 2000

2, 4, 6, & 8MB of FAST RAM for the A2000 & 3000. Easy to expand. Zero wait states & hidden refresh. Four-layer board improves reliability.



SupraModem™ 2400 Plus

SupraModem 2400 with MNP5 & V.42bis error correction & data compression protocols. Allows transmissions up to 9600 bps.



SupraModem™ 2400zi

Internal half-card modem for the Amiga 2000 & 3000. Installs easily in any Amiga bus slot. Supports multiple modems on one computer.

Supra Corporation Worldwide Distributors

Canada
Beamscope
35 Ironside Crescent
Scarborough, Ontario M1X1G5
Tel: 416-291-0000
Fax: 416-291-5721

Finland
Westcom Systems Oy
Kirkkokatu 8, Fourth Floor
SF-48100 Kotka
Tel: 358-52-184-655
Fax: 358-52-184-007

Norway
Atlantis Distribution
Parallellen 12
8012 Bodoe
Tel: 47-816-3040
Fax: 47-816-3041

Spain
ABC Analog, S.A.
Santa Cruz de Marcenado, 31
28015 Madrid
Tel: 34-91248-8213
Fax: 34-1542-5059

Sweden
AlfaSoft AB
Magasingsgatan 9
S-216 13 Malmo
Tel: 46-40-164150
Fax: 46-40-163915

West Germany
European Software Distributors
Rodderweg 8
5040 Bruehl
Tel: 49-2223222-001
Fax: 49-2223222-003

United States

For more product information, or the name of a dealer near you, please call Supra Corporation:

1-800-727-8772

or **503-967-9075**

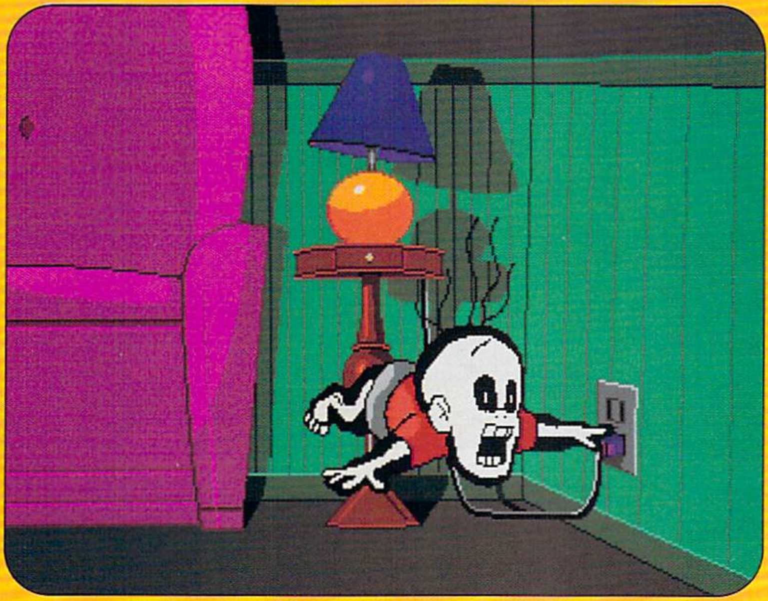
1133 Commercial Way
Albany, OR 97321 USA
FAX: 503-926-9370

DEADLINE
For Contest Entries:
Nov. 30, 1990

Holy Bitmaps!

A FREE AMIGA 3000
AND
A NEWTEK VIDEO TOASTER?

Plus 6 More Super Amiga Prizes?



From David Hancock's "Juice," Animation Video Vol. I

That's right, and here's how to win:

Send us your best Amiga animation for inclusion on **The *AmigaWorld* Animation Video Volume II.** Even if you don't win, we'll give you $50 and a free copy of the video if we use it as part of the tape.

Volume I was superb, but this one's going to be even better. Let's focus on entertainment value—jokes, themes, plots, etc. Let's create animations that say something. Demonstrations of technique are great, but stories are even better! And start cranking now, because we're looking to put this baby together in time for the 1990 Holiday Season.

Send your animations on floppy disks, with full instructions as to loading. Be sure to specify or include suitable playing programs. There is no limit on the size of the animation. But if your animation is particularly large, contact us about other means of transmission (800/441-4403, x-107).

Send your animation to Lou Wallace, Animation Video Contest, *AmigaWorld,* 80 Elm St., Peterborough, NH 03458. Include your name, address, and telephone number. Animations must be your original work. By submitting them, you grant *AmigaWorld* permission to use and distribute them with our tape.

And Don't Forget Our Special Category Prizes!*

Best 3-D

1st PRIZE
Impact A2000-030
Great Valley Products

2nd PRIZE
Imagine
Impulse Inc.

Best 2-D

1st PRIZE
DCTV and **Sculpt-Animate 4D**
Digital Creations / Creative Computers

2nd PRIZE
PageRender 3-D and **PageFlipper Plus F/X 2.0**
Mindware International

Best Storyline

1st PRIZE
SuperGen 2000S Genlock
Digital Creations

2nd PRIZE
3-D Professional
Progressive Peripherals & Software

***All prizes donated by their respective manufacturers.**

You deserve the best!

√ Its handling of graphics is unsurpassed: Pen Pal is the only program I tested that will automatically wrap text around graphics... ***AmigaWorld*** *July* 1990.

√ Number 1 best seller in Productivity Software category. ***Amiga Insider*** - *From The Top - March, April, May, June, July, August 1990.*

√ Five Stars! The best of the lot by a huge margin... Intuitive and easy to use... Fast enough that speed isn't even a consideration. ***Info*** *Jan/Feb 1990.*

Word Processor:

- Easy-to-learn and use.
- Import IFF pictures.
- Drawing tools for making lines & boxes.
- 100,000+ word spelling dictionary.
- Automatic form fill-in.
- Mail-Merge.
- Search and Replace.
- Automatic text wrap around graphics.
- Built-in Database.

Pen Pal

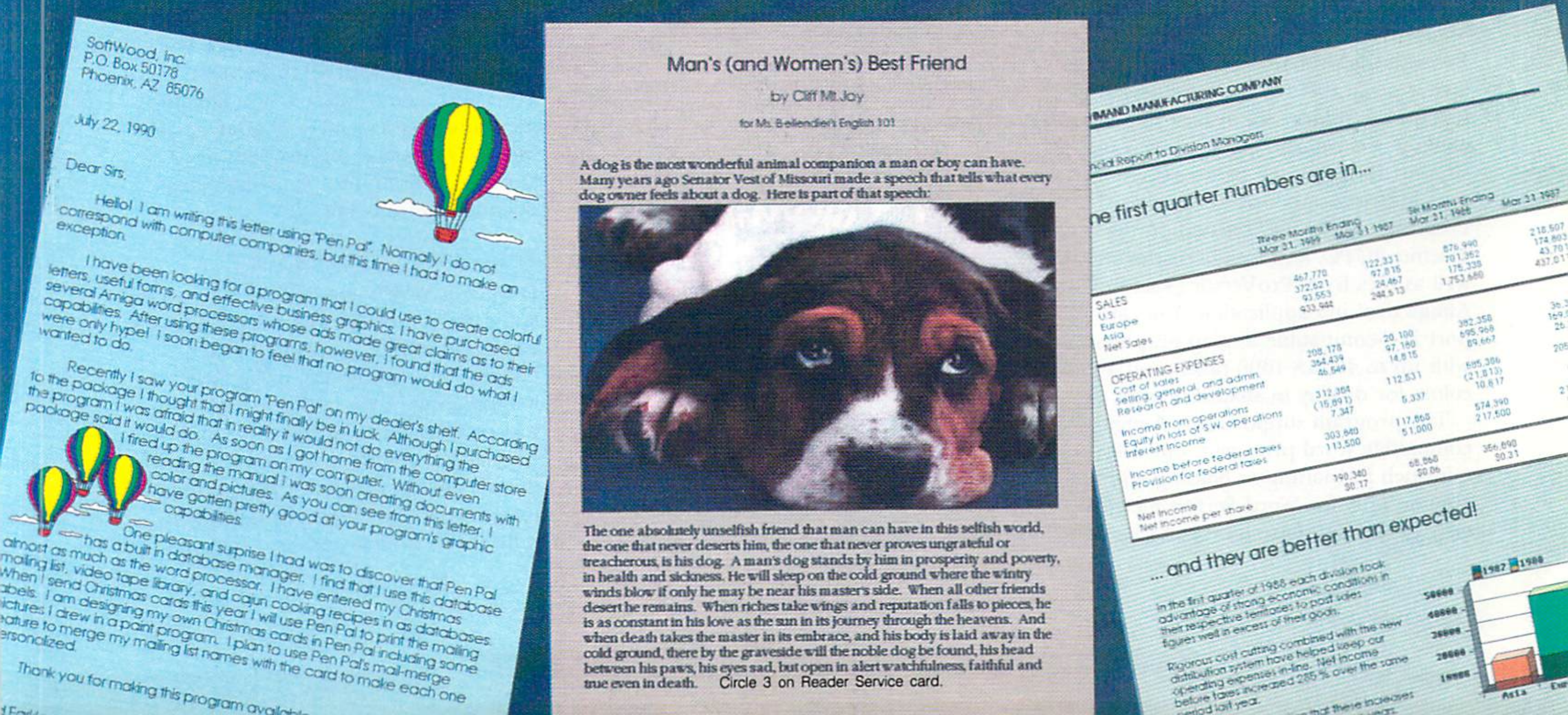
by: SoftWood, Inc.
1 (800) 247-8314

$149.95

Database Manager:

- Keep track of names and addresses, things-to-do, recipes, tape libraries, and more.
- Merge data with word processing documents for personalized form letters and reports.
- Very fast sorting and searching.
- Print mailing labels and reports.

The Pen Pal documents shown below have text placed over filled backgrounds, reproduce IFF and HAM pictures in their original palettes, automatically flow text around irregular shapes of graphics, and use multiple fonts, styles, and sizes. Make no mistake about it - no other word processor can produce documents of this quality on the Amiga. For features, price, ease-of-use, quality, and customer satisfaction never settle for less than the best. Ask for Pen Pal - your best choice in a word processor.



Circle 3 on Reader Service card.

REVIEWS

SAXON PUBLISHER

Ambition will get you everywhere—almost

By Chris Dickman

SAXON INDUSTRIES HAS a modest claim for its first application, Saxon Publisher. It's the best desktop publishing program available for the Amiga, the company boasts, and within a year it will be superior to anything available on the Macintosh or PC platforms.

Only time will prove the validity of the latter prediction, although I do not think the reputations of PageMaker, Ventura or QuarkXPress are in much danger. And while Saxon is a promising first release that in many ways exceeds the capabilities of PageStream (Soft-Logik), Professional Page (Gold Disk) is still the tool of choice for professional-quality publishing on the Amiga.

OPENING UP TO IMPORTS

Because the primary function of a page-layout program is to integrate existing text and graphics files, robust import abilities are a must. Saxon provides good support for graphics, being able to import industry-standard Encapsulated PostScript (EPS) files created on the Macintosh, PC, and Amiga platforms, as well as files from ProVector (Taliesin), an Amiga drawing application. You can import IFF-compatible bitmap graphics with up to 4096×4096 pixels and 4096 colors for display in shades of gray.

The program supports any Amiga-compatible word processor, but will retain such formatting as bolding and italicization only for Word Perfect files. In view of the fact that no other formatting survives the journey to a Saxon page, you must do all the text formatting in Saxon itself.

As with most page-layout programs, text is contained in boxes, which are linked together both on a page and between pages. You can type text directly into boxes or import it from a file. You can move and resize boxes, and add sizing handles that let you draw irregularly sized boxes. There is also a freehand box-drawing gadget, with which you can easily draw a box of any shape. This provides an intuitive method to create boxes for wrapping text around irregular graphic shapes or enlarged initial caps. You can assign such boxes to function keys and recall them when needed.

Because there is no master-page feature, you must design pages individually.



YOUR TURN!

Saxon Publisher does not support some of the fonts I use most—like Zapf Chancery and Zapf Dingbats—although I understand the company is working on this. I think support of downloadable fonts is critical.

The program does a beautiful job on structured bitmaps—far better than Professional Page. I also like being able to specify the angle of a slant. It has taken me a while to get used to Saxon's setup, though, because it is different from the other desktop-publishing programs I have used. I still find it easier to change text styles in Pro Page.

I have found occasional bugs in the software. One time, while printing a proof, the program caused a whole page to bold irrevocably. I have not yet seen the perfect Amiga desktop-publishing program!

Gail Simunac
Kansas City, MO

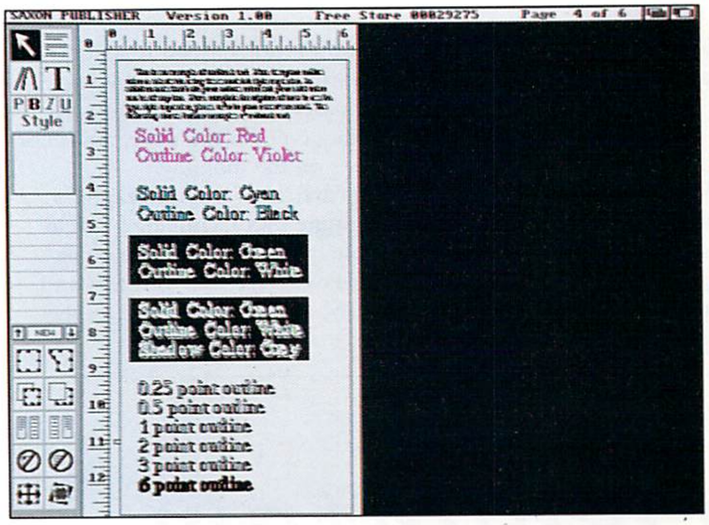
You can also assign entire pages to function keys for recall within a document, but the program does not keep track of the assignments. And if you create a variety of layouts, you will soon run out of function keys.

Column-guide creation is equally idiosyncratic. You specify the number of columns, draw a box on the page to indicate left and right outer columns, then drag to the left to size the columns. You must do this all by eye on the screen, with help only from the rulers. The space between the columns snaps to the current grid setting while you drag, making it difficult to know the size of the space you are creating. Guides can be only one width—there is no way to create asymmetrical guide layouts. Once you have created guides, you must draw boxes in them before entering text. This whole process seems unnecessarily labor-intensive.

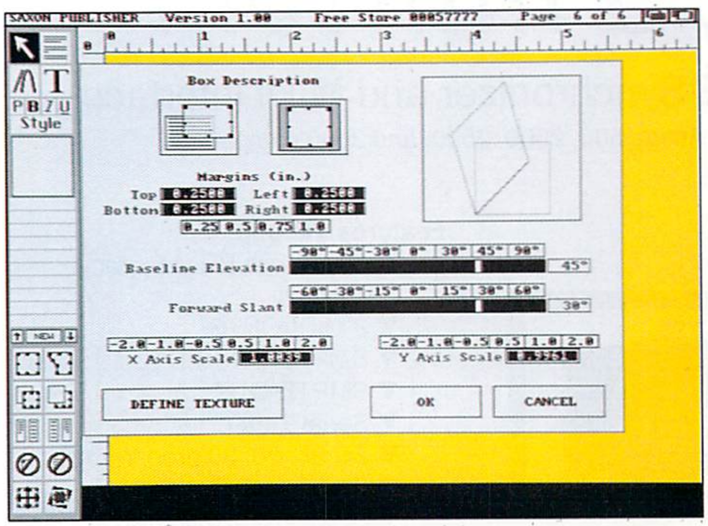
Imported text and graphics files are listed in Saxon's sidebar to the left of the page. Clicking on a selection places that file in the currently selected box. You must repeat this process for each box you wish to fill with imported text; there is no provision to place a text file automatically on every page of your document. This puts a serious dent in Saxon's claim to be suitable for long-document production.

FORMATTING WITH STYLE

Once you have some text on your page, you can perform all formatting, with the exception of minor changes such as bolding or underlining, using style tags. Simply apply these tags to paragraphs of text or embed codes into the text file. Formatting styles are grouped together in style sheets, which are independent of the current publication. You can save style sheets to disk and load them as re-



Saxon's quick-display fonts.



Boxing in the Saxon ring.

quired. To define styles, just fill out the style requester.

Each style has five components: Normal, which applies to an entire paragraph; Caps, applied to all capital letters; First, applied to the first letter of a paragraph; and Special1 and Special2, which you can use for such things as mathematical characters and bullets. Although you define each of these separately, if you change the font name or size in the Normal category, the other four components will also take on these attributes. Saxon takes good advantage of PostScript printers by letting you define type—in any size from 3 to 2000 points—in one-point increments.

Nice touches in the type requester include automatic drop-cap creation. This requester also lets you define such typographic attributes as interline and interparagraph spacing, alignment, and tracking (intercharacter spacing). Saxon places left and right indents under Spacing, and while you define values in points, you define first-line indents elsewhere in the requester using inches. This is needlessly confusing, as is Saxon's limited tab handling, which sets tabs permanently for every half inch. This inflexibility makes Saxon unsuitable for the many documents that require accurate alignment of columns.

Most unusual is a separate texture requester, with which you can define a range of effects to apply to type, boxes, vector-based drawings, and even entire pages. The effects include outlines and drop shadows of different sizes and colors, 18 PostScript linear and radial fountain fills, and three variants of the brick effect used on the Saxon box.

Style Shows

Styles are applied to an entire paragraph at a time. The program provides four gadgets to apply the current style to every paragraph in either the box or the entire document, moving forward or backward through the publication. This is an ingenious way to apply tags to multiple paragraphs. Unfortunately, however, there is little provision for overriding the style in a given paragraph. You cannot, for example, assign a different face to just one word in a paragraph. You can change only its bolding, underlining, or italicization—a limitation I would like to see removed.

As with all style-based programs, changing the definition of a style automatically reformats all paragraphs attached to that style, making global formatting changes painless. Painless, but not fast; I found that Saxon slows to a crawl when working with styles.

Because text always resides within a box, changing the attributes of a box alters any resident text. The Box requester provides some interesting abilities, such as rotation, x- and y-axis scaling, and skewing. As you enter values for any of these, the requester provides a visual indication of the effect. Here you can also define margins, which have the welcome ability to automatically refit corresponding text when they are altered. What's missing is the ability to perform such actions as changing margins or condensing text in several boxes simultaneously.

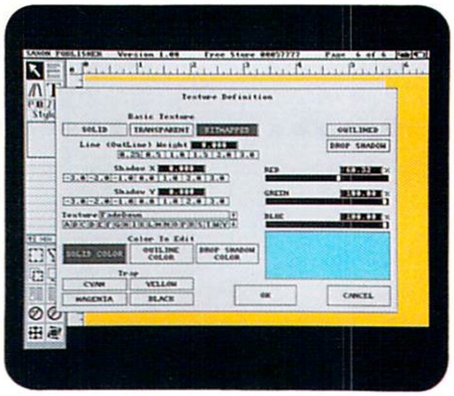
Saxon provides the usual box- and line-drawing features, as well as the ability to draw complex Bezier curves. Drawn objects, however, must be attached to a box, and to move the object, you must move the box. In doing so, you see only the box, not the objects, which makes it very difficult to position them accurately. Worse, there is no way to resize objects. Saxon is thus very awkward for forms creation. The good news is that you can apply any of the options ►

in the Texture Definition requester to drawn objects. But clearly, this is one aspect of the program that needs further work.

The Font Dilemma

The lack of interest on the part of traditional font vendors in supplying type in Amiga versions has for years bedeviled the creators of Amiga publishing applications. These developers were forced to use their own crude bitmap fonts or non-standard, outline-font technology. The results were often less than professional-quality type on the page, and poor screen fonts on the monitor.

With the arrival of Compugraphic's scalable outline font technology, it is at last possible to create both high-quality output on PostScript laser printers and imagesetters, and accurate type display on screen.



Define Texture effects.

Saxon, however, has decided to go its own route in bringing a broad range of type-manipulation effects to publishers. It currently provides access to the standard resident fonts of PostScript laser printers, with the exception of Zapf Dingbats and Zapf Chancery (although Saxon promises to develop support for these shortly).

In addition, it supports a limited number of other PostScript fonts: American Typewriter, Benguiat, Garamond, Lubalin, and Souvenir. If you can download the Adobe PostScript versions of these (with a Bridgeboard, for example) to your laser printer, you can use them. You can also output your document at a service bureau that has these fonts. There is, however, no way to add fonts to Saxon. If you want to use Futura, for example, you're out of luck.

Saxon provides two screen fonts for each font it supports: an exceedingly crude version, which displays quickly, and a detailed version that displays very slowly. Because you can assign either version to a style, you can display large headlines in the smooth version and body copy in the crude form. (Saxon promises a cleaner version of the fast screen font.)

Designers need access to a wide variety of fonts, and Saxon could easily add support for a broader range of Adobe PostScript fonts. That, however, does not seem to be the company's goal. Saxon has announced that it will develop its own downloadable fonts and a separate program to allow font creation. I wish them the best, but typography being the exacting art that it is, similar efforts have not met with success in the past. I would prefer to have more support for Adobe ►



The art of driving.

Introducing the ultimate driving machine, the AE HD (high density) Drive, Applied Engineering's new high density 3.5 drive (above, at right). The first and only high density drive for the Amiga, it runs circles around the competition. The FCC certified design supports both standard 880K and 1.52 MEG 3.5″ disks. The new AE standard device controls both the high density mode and built-in electronic disk ejection. For running the new Amiga UNIX, the AE standard 1.52 MEG format is a virtual must.

1.52 MEG capacity means you can stop playing diskette roulette. Simply store your large 2-disk application programs on one, high density disk and forget about fumbling for "sets" of disks. And storing files just became twice as easy too, because you'll only need half the number of disks.

We also added performance features like an exclusive 2-way LED indicator that displays green for reading, red for writing. And a smooth, quiet electronic disk ejection to replace the clunky "punch" of other drive's ejectors. Since our electronic ejection is tied to the write/enable function, you can no longer accidently trash a disk by inadvertently pushing the eject button while the drive is writing. Our ejector waits until the drive completes the write and then auto-ejects the disk.

Beauty AND brains. Aesthetically, the AE HD Drive is every bit as handsome as it is intelligent. We designed a high-impact ABS plastic case to protect the top quality SONY mechanism inside.

For driving on a budget, we've designed a quick, quiet 880K standard 3.5" drive as well (above, at left). Incorporating a reliably quiet and trouble-free design, the AE 880K Drive™ sports a tough aluminum case, custom molded cable and an on/off disable switch.

Both drives are compatible with all Amiga computers and feature complete daisy-chain capacity (from AE to another drive or vice-versa), MS-DOS compatibility, pass through connectors, FCC certified designs and full one-year warranties.

AE High Density 3.5 Drive........ $239
AE 880K Drive.................. $119

For ten years, AE has forged a reputation for exciting and innovative peripherals. Built to our own exacting standards of quality and reliability, our products are backed by the best warranties and the best technical support in the business.

Order today! To order or for more information, see your dealer or call (214) 241-6060 today, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add $8^1/_4$% sales tax. Add $10 outside USA. Dealer inquiries invited.

AE
Applied Engineering®
The enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
P.O. Box 5100
Carrollton, TX 75011

Made in the USA

fonts or adoption of the Compugraphic technology.

Saxon prints only to PostScript printers and provides admirable control when creating positives or four-color separations on high-resolution PostScript imagesetters. You can set values for screen angle and density, and output bitmaps at double or quadruple their original resolutions. The usually terse documentation is particularly unhelpful in discussing printing issues; those unfamiliar with PostScript printers may be in for a lot of trial and error.

Now and the Future

There's no doubt that the folks at Saxon are ambitious. A version slated for November release should add automatic page numbering, template support, master-page capabilities, automatic hyphenation, and rulers in points, picas, or centimeters. Also announced is a Saxon-developed PostScript interpreter, to allow output on non-PostScript devices such as dot-matrix printers. Better memory management is also being promised. This is welcome: Just over 120K of memory is left after loading Saxon on a one-meg machine, which provokes insufficient memory messages for even the simplest documents. You'll need several megabytes to perform useful work.

The first release of Saxon is a curious mix. On the one hand, it has such advanced features as extensive style-tag support, PostScript-based text manipulations and graphic support. On the other, it is weak in the fundamental areas of tabs, graphic-object manipulation, hyphenation, Adobe font support, and the formatting of text areas smaller than a paragraph. Saxon Publisher is currently appropriate for short, funky documents packed with graphics and weird text effects. Future releases may well turn it into a professional-level program for creating long, high-quality publications in a production environment.

Saxon Publisher
Saxon Industries
14 Rockcress Gardens
Nepean, Ont.
Canada K2G 5A8
613/228-8043
$445
One megabyte and two disk drives required.

3D Professional

Watch out for the undertow!

By Bradley W. Schenck

OVER THREE YEARS ago, Amiga artists received the first wave of 3-D modeling software. As we experimented with those tools, we watched a new generation emerge with Videoscape 2.0 (Oxxi/Aegis), Sculpt-Animate 4D (Byte by Byte), and Turbo Silver SV (Impulse). Now, while we anticipate the third wave—with Impulse's Imagine, Hash's Animation:Journeyman, and NewTek's Lightwave 3D—3D Professional looms out of the shadows. And it does loom—in the biggest software package ever to

Continued on p. 94

INCLUDES TUTORIAL VIDEO

PROFESSIO

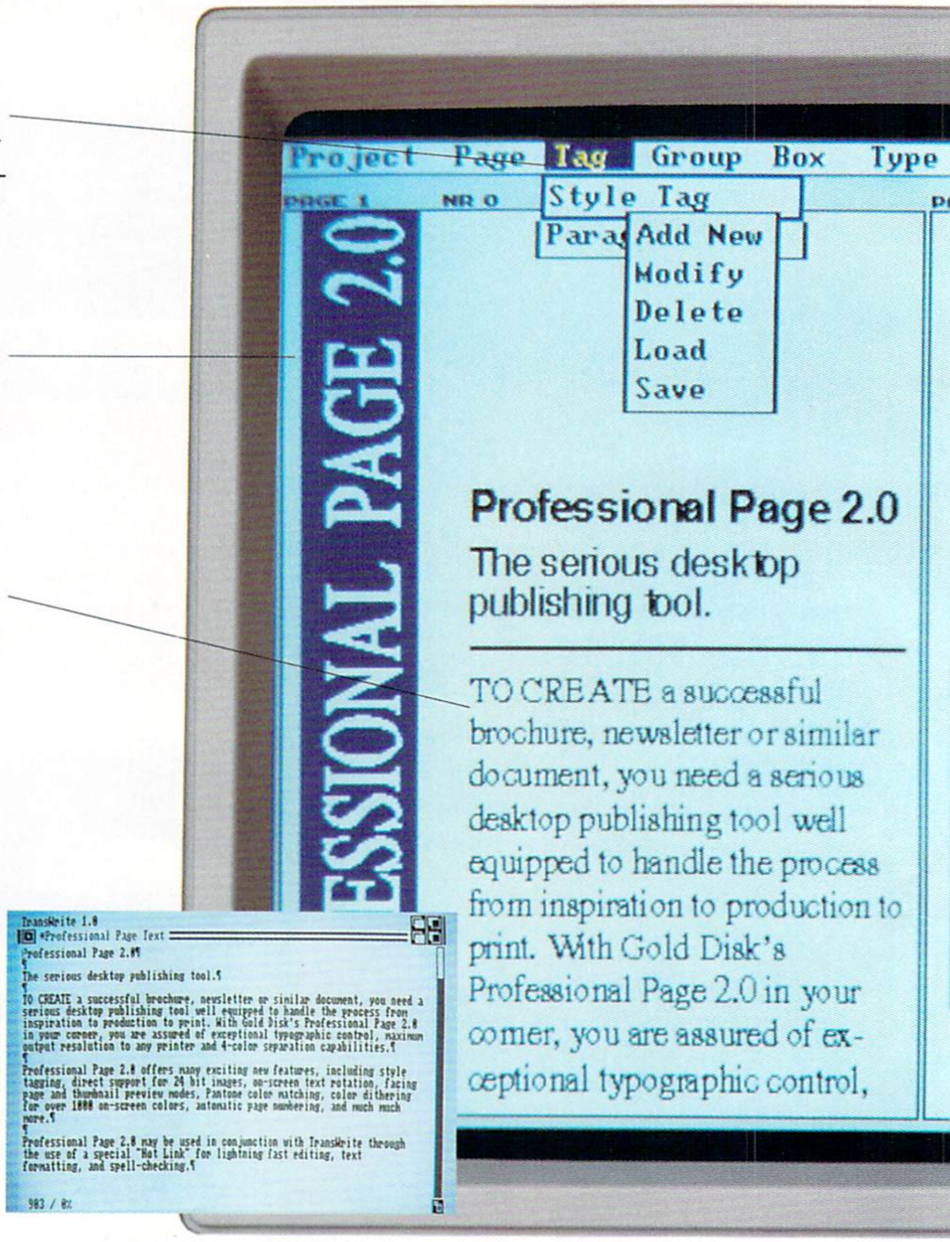
Quick text design changes are accomplished with Professional Page' style tagging. An unlimited number of style tags may be defined -- specifying font, style, size, line spacing, tracking, baseline shift, justification, kerning and hyphenation.

Put a new angle on text, bitmaps and structured graphics with Professional Page's box rotation feature. Rotate a box at any angle either numerically or with the mouse. A tilt in the right direction can give documents added pizzazz.

Customize text with greater control over letter and word spacing. And, as always, Professional Page supports AGFA Compugraphic fonts, allowing for smooth, jaggie-free output at any point size to any printer.

Automatic page numbering is easy with Professional Page 2.0 because you can insert the current page number at any point you specify in the text. And this is automatically updated when the page number is changed.

A built-in word processor provides for quick text writing and editing and includes a 90,000 word spell checker.



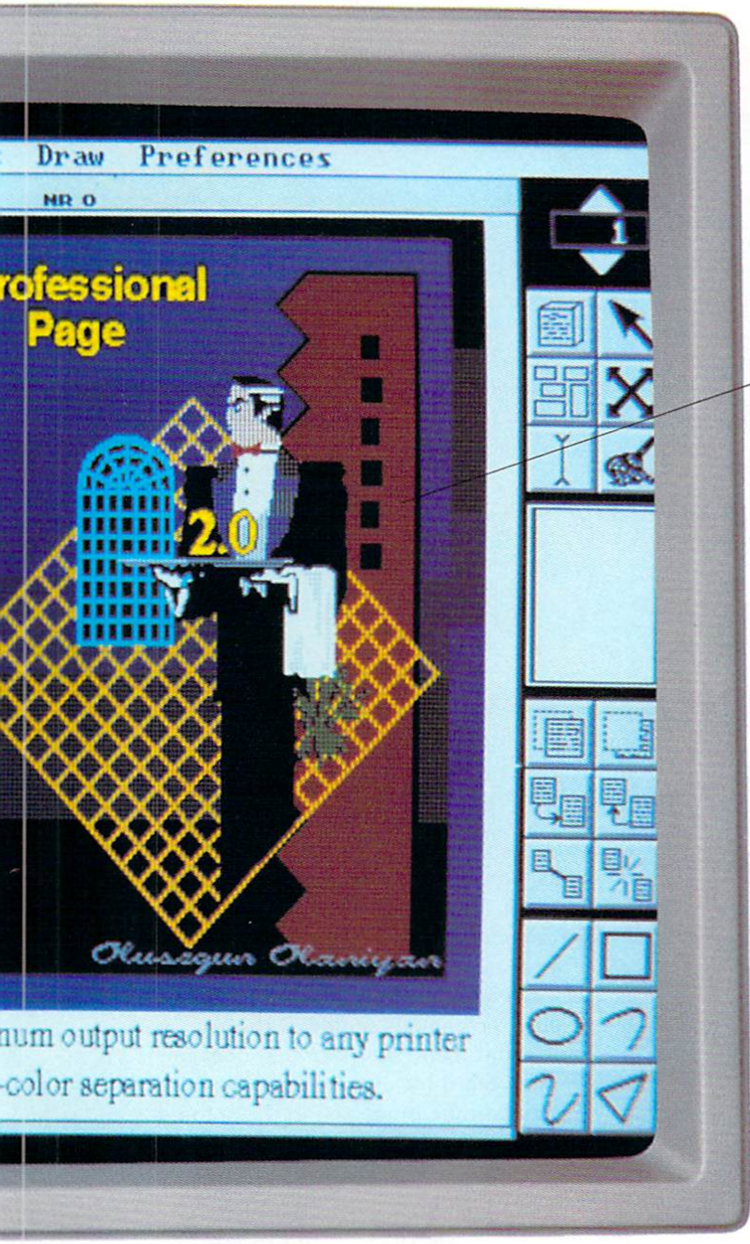
ADVANCING THE ART OF

Gold Disk has a publishing program that gives you more creative control over your desktop documents: **Professional Page 2.0**. Designed for the serious Amiga user who is concerned with sophisticated typography, color design and separation, and production control, this powerful publishing package gives you professional results.

For producing simple flyers and brochures to full four color ads and magazines, Professional Page is the desktop publishing program of choice. In fact it is used by more magazines than any other package.

And to get you producing professional documents quickly, we have included a free tutorial video tape in every package.

IAL PAGE 2.0



Preview multiple pages on screen simultaneously. Now you can review up to six document pages at a time. Each thumbnail print details your graphic design and text positions for an overall look at your layout.

Adding a splash of color is easy because of the built-in PANTONE MATCHING SYSTEM.®* Selecting a color is as easy as pointing and clicking. Plus, over 65,000 defined colors are supported, and color dithering allows up to 1,000 color to be seen on screen at once. And with Professional Page 2.0 you can color separate your documents directly to film.

Import and print 24 bit color files for color separation--directly from Professional Page--without the need for extra utilities.

New owners can get version 2.0 free. If you have purchased Professional Page on or after August 1, 1990, we will send you version 2.0 free of charge when you send in proof of purchase with your registration card.

DESKTOP PUBLISHING.

To find out why Professional Page 2.0 is the expert's choice, see your local Amiga Dealer or call **1-800-GOLD-DSK**. If you take desktop publishing seriously, we're the ones to work with.

Professional Page is the best, and the best just got better.

Gold Disk,
P.O. Box 789, Streetsville,
Mississauga, Ontario, Canada
L5M 2C2.

GOLD DISK

TOP 10

By Linda B. Laflamme and Game Testers Harv Laser, Rob Lawrence, Graham Kinsey,

TRYING TO SIDESTEP reality? The third annual Top 10 Games has just what you need, from Spanish galleons to space ships, from terrorists to giant ants. After many hours of playing (er, research), testers rated each game for quality of presentation (Does the game have good graphics and sound?), durability (Does it hold its appeal for a long time?), and, most important, entertainment value (Is the game fun?). To prevent repeating ourselves, we decided that only games released since the last ranking (held in July of '89 and appearing on p. 23 in the November '89 issue) were eligible.

10 PIRATES

Graphic Adventure
Microprose, $44.95



Command a ship of go-for-broke mercenaries, visiting 50 towns in the Caribbean and living the life of a 16th- or 17th-century pirate. At the outset, you can specify your nationality, the difficulty level, your special skills, the years during which you wish to plunder (from 1560 to 1680), and whether you wish to mount your own career or re-create one of six famous excursions. While the historic expeditions are challenging, controlling the game is simple, with a mouse-and-menu interface that does not dampen the spirit of the game. You quickly become immersed in the era and the call of the sea.



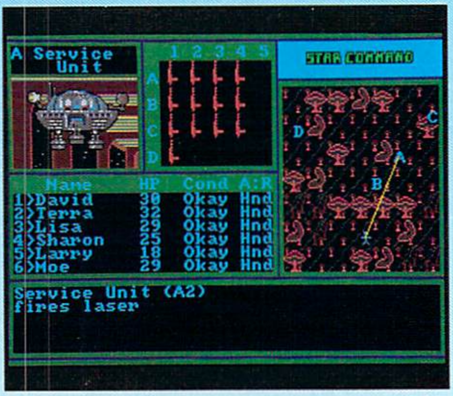
ILLUSTRATED BY ISTVAN BANYAI

GAMES

David T. McClellen, Peter Olafson, Kevin Rohrer, John Ryan, and Dodson Yaple

9 STAR COMMAND

Role-Playing Adventure
Strategic Simulations, $49.95



Straightforward and involving, Star Command is proof you don't need fancy graphics and sound effects to make a good game. First, you create and lead eight star-troopers on a mission to find and destroy Blackbeard and his hoard of intergalactic pirates. The self-mapping feature comes in very handy for indoor exploring. As you progress and best the enemy in hand-to-hand and ship-to-ship skirmishes, you gain experience, rank, and more potent weapons. With the pirates disposed of, prepare to repel the invasion of an alien, insectoid race.

8 ESCAPE FROM SINGE'S CASTLE

Arcade
Visionary Design, $69.95



Want a laser-disc game, but can't afford it? Get this look-alike, instead; you'll have the same fun, practically the same graphics, and some cash left over. A follow-up to Dragon's Lair, Singe's Castle combines an intuitive interface with the original's stunning animation style and simple do-or-die play. Not only can you now save five games in progress and specify the difficulty level, but you can also turn on a Cheat mode to point you in the right direction. To truly rival the laser-disc version, Singe's Castle will link to Dragon's Lair. You get the arcade-length game and an interface for Dragon's Lair in one fell swoop.

7 688 ATTACK SUB

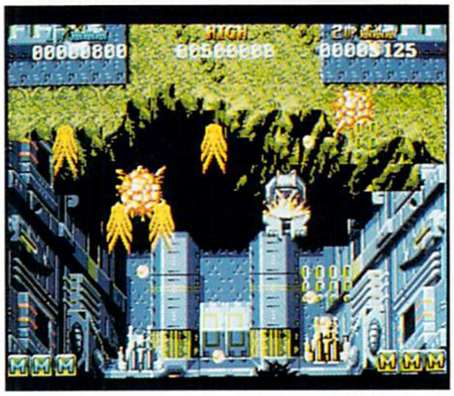
Strategy
Electronic Arts, $49.95



As captain of a U.S. Los Angeles-class nuclear attack sub, you race the clock or a computer-controlled enemy on ten missions, ranging from sinking three derelict destroyers while remaining hidden from a friendly sub, to escorting a convoy or searching for and sinking a Soviet missile submarine. If you're feeling more antisocial, you can command a Russian Alfa-class sub and take the opposite role on missions, shadowing American subs or finding and sinking one before it completes its job. Each sub comes equipped with all the weapons and sensors—controlled via eight displays—that you'd find on its real-life counterpart. Be prepared, however, for pauses while the game changes displays and loads the realistic digitized sounds.

6 BATTLE SQUADRON

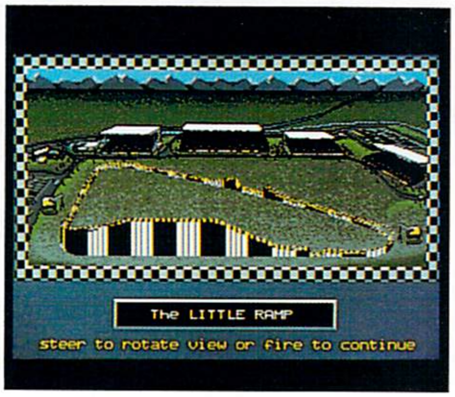
Arcade
Innerprise, $49.95



Just keep shooting. A beautifully rendered space blastfest, Battle Squadron never lets up its frenzied pace. You encounter four types of ships (some of which are invisible) and far too many ground installations for your health on the game's three long and challenging levels. At least you can tailor the game to your skills by specifying the number of extra lives you start with, your initial weapon, and the enemies' speed and maximum shots. If you need moral and fire support, you can team up with a friend, but keep in mind that you're also fighting each other for points. The game's most welcome feature is the quick return to action after you die; the most annoying is having to plug the mouse (or joystick) into port 2 to control the game in single-player mode. Don't stop to ask why player 1 is in port 2 and vice versa—just keep shooting.

5 STUNT CAR RACER

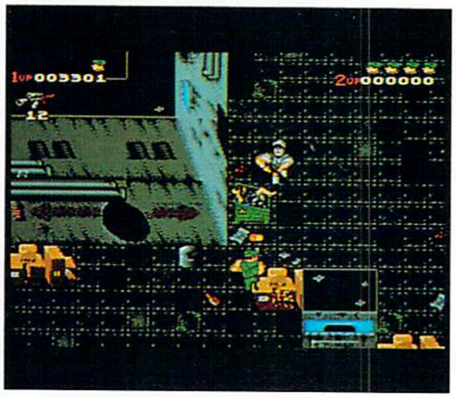
Sports
Microprose, $49.95



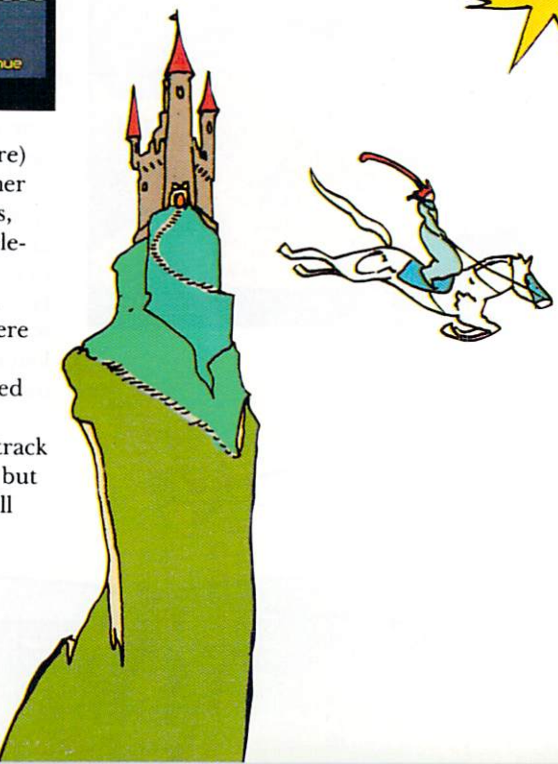
Imagine driving at 200 mph (or more) along a roller coaster. Not just another racing game that sends you in circles, Stunt Car Racer lets you roar over elevated stunt tracks full of steep hills, drawbridges, ski jumps, and banked curves. As if the tracks themselves were not enough of a challenge, you race against a series of computer-controlled opponents who become increasingly hard to beat as you advance up the track levels. The graphics could be better, but the animation is so realistic that it will make even the strongest stomachs queasy. Stunt Car Racer is also this year's winner of the "do-not-try-this-at-home" award.

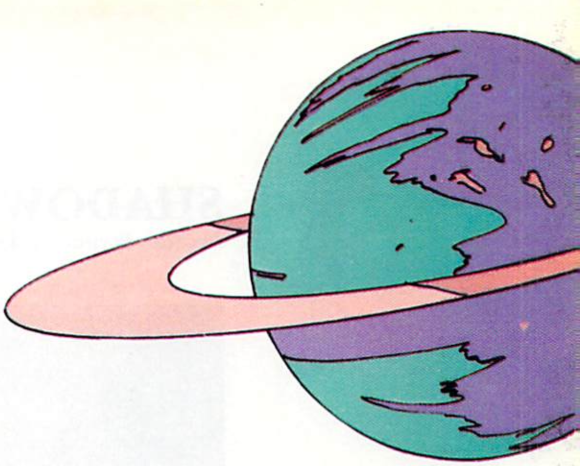
4 NY WARRIORS

Arcade
Virgin Mastertronics, $49.99



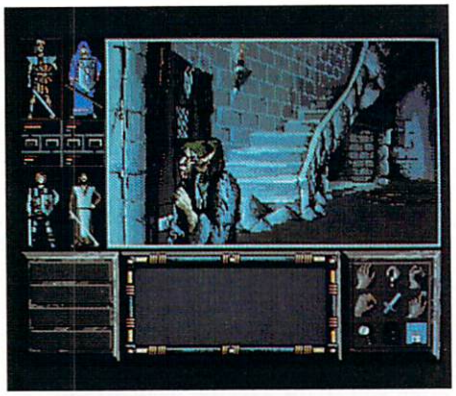
Arm your rocket launcher, warm up your flamethrower, and get ready to toast some trigger-happy gangsters. Terrorists have taken over the World Trade Center, and you (and a friend, if you wish) must wipe them out before they can nuke the city with a hydrogen bomb. First you have to get to them, though. With 360 degrees of scrolling streets and slums full of obstacles, you'll find plenty to blast. The digitized sound effects and detailed graphics are as raucous as the game. Your best weapons are lightning reflexes and a very bad temper.





3 DRAKKHEN

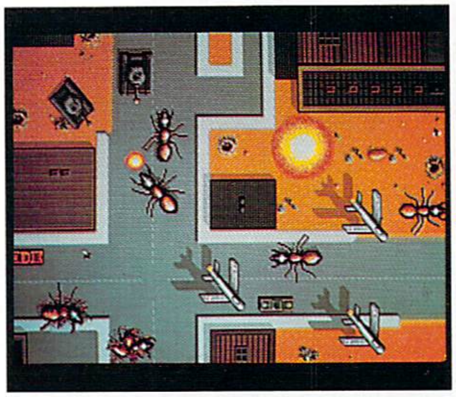
Role-Playing Adventure
Draconian, $59.95



While in most dungeons-and-dragons games you are at odds with the dragons, in this three-dimensional quest you're trying to save their kingdom. With your band of three fellow adventurers, you traverse the island's four terrains (desert, steppe, swampland, and arctic waste) to retrieve eight magic gems from the dragon princes and resurrect the great dragon. You can gain experience and power by beating up everything that crosses your path. Don't expect much more for character interaction; you can basically just greet and question the non-players. The scenery, however, more than makes up for the disappointing locals.

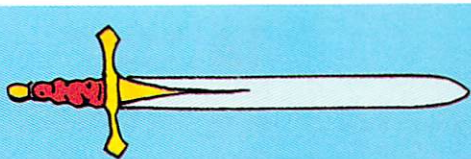
2 IT CAME FROM THE DESERT

Action/Strategy
Cinemaware, $49.95



What happens when a meteor lands in the desert? Ants mutate to B-movie proportions, Cinemaware makes a combination strategy and arcade game about them, and you become a geologist. Your job is to convince the rather thickheaded locals of the danger and to organize an army against the creatures. While the game features plenty of character interaction, you also have to be a skilled fighter. Stock up on knives, cars, pistols, grenades, dynamite, tanks, jet planes, and, of course, bug spray. The graphics, music, and speech carry on the company's tradition of show pieces. If you win the game but crave more extermination, check out It Came from the Desert II: Antheads ($14.95). ►

Before You Play



The type of game that makes one player want to continue forever may make another throw down the joystick in disgust. To make it easier for you to identify the games you like and avoid those you know you'll never win, we've classified the options into the following categories:

Arcade

You use a joystick or mouse to shoot, catch, avoid, or deflect objects. Although many arcade games require strategic planning, their emphasis is on dexterity and speed.

Action/Strategy

Trying to appeal to action lovers as well as thinkers, this category contains strategy games that have arcade or arcade-like elements. In the best examples, the arcade sequences are seamlessly integrated into the play of the game. In poorly-designed games, the arcade aspect seems tacked on as an afterthought.

Sports

These games simulate the play of a particular sport such as hockey, basketball, or racing. Some sports games stress arcade skills, while others emphasize strategy.

Text Adventures

In these imaginary worlds, you must use your wits to explore and survive. The worlds are created by descriptions supplied by the game. To specify your actions, you type commands.

Graphics Adventures

Also called illustrated adventures, these games use pictures to supplement or replace text descriptions. In some graphics adventures, the images serve only as illustration, while in others they serve as the interactive interface. You point and click to indicate your actions.

Flight Simulators

Zoom into the air realistically with these games. You are at a flying machine's controls as ever-refreshed 3-D graphics simulate its movement through the skies.

Role-Playing Adventures

Assemble a party of adventurers, outfit them with supplies bought from the local store, and send them on a quest to (usually) wipe out some monstrously evil being. The task is to develop characters with the attributes necessary to survive the final challenge.

Strategy Games

With strategy games, joystick prowess takes a back seat to cool, calculating thought. The category encompasses games of logic, as well as those based on real-life scenarios.



1 SHADOW OF THE BEAST

Arcade; Psygnosis, $49.95



Notorious for its difficulty, celebrated for its incredible graphics, Shadow of the Beast is the *piece-de-resistance* among arcade adventures. As you jump, punch, and kick your way above and below ground through this carefully detailed world, you'll meet 132 varieties of creatures straight from your nightmares. Don't fail to pick up the scattered items you need for the final showdown, assuming you make it that far. Some monsters shatter to reveal smaller, equally nasty creatures inside; hold your ground and punch again. Loosen your grip on the joystick or become distracted by the game's up to 13 levels of scrolling and six music scores, and you'll find yourself with a long wait (almost two minutes) while you're resurrected from an untimely death. The longer wait for a sequel is over, however; Shadow of the Beast II was recently released.

The Second Tier

If you've already played all the top finishers and want to sample the rest of the best, check out these ten runners up:

11 Day of the Viper
Graphic Adventure
Accolade, $49.95

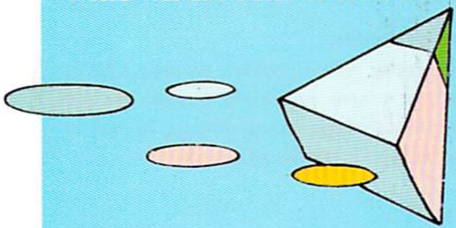
Guide a Viper-5 robot on a search for a sequestered cyborg and his robotic army.

12 The Third Courier
Graphic Adventure
Accolade, $49.95

As the star of this espionage thriller, you must hunt on both sides of the Berlin wall for stolen U.S. defense plans.

13 Their Finest Hour
Flight Simulator
Electronic Arts, $59.95

Fly for either side in this re-creation of World War II's Battle of Britain.



14 Nuclear War
Strategy
New World Computing, $49.95

Bomb or be bombed in this tongue-in-cheek game of global politics.

15 Space Ace
Arcade
Ready Soft, $59.95

Save beautiful Kimberly from evil Commander Borf in this Don Bluth arcade look-alike.

16 Indiana Jones & the Last Crusade
Graphic Adventure
Lucasfilm, $49.95

Guide Indy on his search for the Holy Grail.

17 Budokan: The Martial Spirit
Sports
Electronic Arts, $49.95

Practice Karate, Nunchaku, Kendo, and Bo; then test your skills at the tournament in Tokyo.

18 Romance of the Three Kingdoms
Strategy
Koei, $69.95

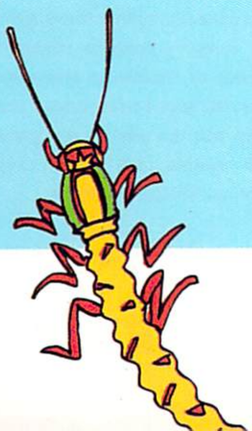
Try to unite ancient China under one ruler—you.

19 Clown-o-Mania
Arcade
Star Games, $34.95

Run a clown through multiple scrolling levels, collecting jewels and blasting monsters.

20 Gold of the Americas
Strategy
Strategic Studies Group, $39.95

Vie with explorers from three other countries to conquer and colonize the Americas.



Manufacturers' Addresses

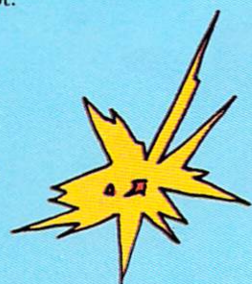
Accolade
550 South Winchester Blvd., Suite 200
San Jose, CA 95128
408/985-1700

Cinemaware
distributed by Electronic Arts

Star Games
708 W. Buffalo Ave., Suite 200
Tampa, FL 33603
813/222-0006

Draconian
distributed by Data East USA Inc.
1850 Little Orchard St.
San Jose, CA 95125
408/286-7074

Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
415/571-7171



Innerprise Software
128 Cockeysville Rd.
Hunt Valley, MD 21030
301/785-2266

Koei Corporation
One Bay Plaza, Suite 540
1350 Bayshore Highway
Burlingame, CA 94010
415/348-0500

Lucasfilm Games
distributed by Electronic Arts

Microprose
180 Lakefront Dr.
Hunt Valley, MD 21030
301/771-1151

New World Computing
distributed by Electronic Arts

Psygnosis
17 St. Mary's Court
Brookline, MA 02146
617/566-1569

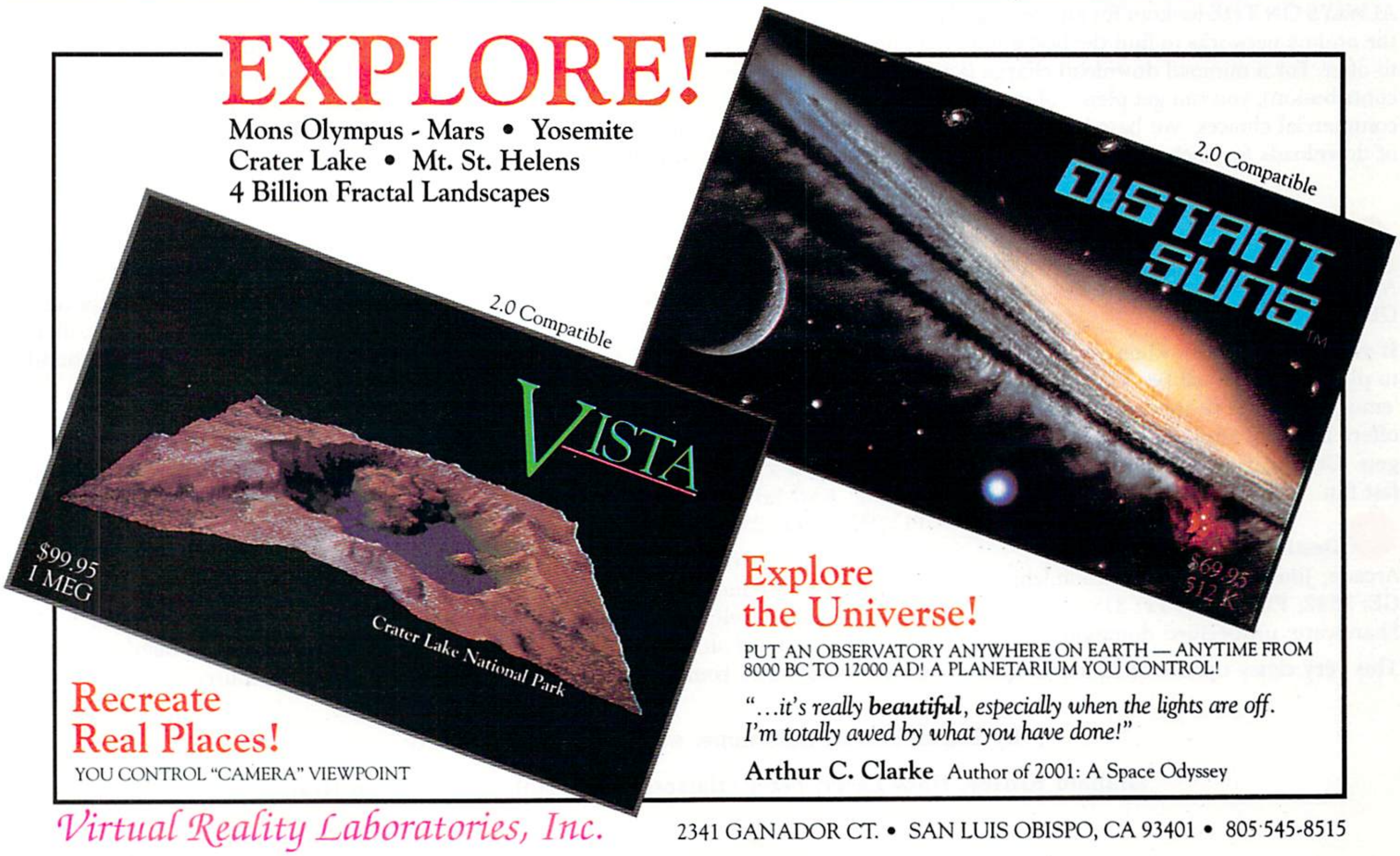
ReadySoft
PO Box 1222
Lewiston, NY 14092
416/731-4175

Strategic Simulations
distributed by Electronic Arts

Strategic Studies Group
distributed by Electronic Arts

Virgin Mastertronic
18001 Cowan, Suites A & B
Irvine, CA 92714
714/833-8710

Visionary Ltd.
15235 Shady Grove Rd., Suite 100
Rockville, MD 20850
301/926-8300 ■



Bargain Basement Gems:

THE TOP 10 PD GAMES



ALWAYS ON THE lookout for an evening of cheap fun, we scouted the on-line networks to find the best games the public domain has to offer. For a minimal download charge (and maybe a shareware contribution), you can get plenty of games that rival the expensive commercial choices. We based the rankings on the total number of downloads for each game and the Gaming Board's ratings for quality of presentation (Does the game have a good interface?), durability (Does it hold its appeal?), and entertainment value (Is the game fun?). To help you find the winners, we've listed their file IDs for the major communications networks: CompuServe (CS), GEnie (GE), and PeopleLink (PL); plus their Fred Fish disk numbers (FF).

10 DeluxeBurger

Arcade; Brian Conrad; CS: Deluxe.arc; GE: 3975; PL: 17946

If you're not hungry when you sit down to play, you soon will be. This silly shoot-'em-up from the programmer of SimCity offers burgers, fries, and ketchup as targets. Grab a beer and join in the greasy fast fun.

9 Destination Moonbase

Arcade; Jimbo Barber; CS: Moon.lzh; GE: 8342; PL: 21405; FF: 312
Shareware: unspecified donation.

This very classy update of Lunar Lander adds a few new twists. After picking up cargo and fuel by docking with an orbiting space station, you must deliver the load to the lunar surface. Just like a trucker, your goal is to complete all your assigned deliveries while crashing as infrequently as possible. Gorgeous graphics add to the fun.

8 Quattro

Arcade; Karl-Erik Jenss; CS: Quattr.zoo; PL: 21237; FF: 230

One of many Tetris and Welltris clones, Quattro is a two-dimensional version with three difficulty levels. With the joystick or keypad, you must maneuver the falling puzzle pieces into complete rows, which collapse down on each other. Let the pit fill to the top and you've lost. To help you plan a strategy, the game previews the next piece to fall. To add to the fun, it offers sound effects and 43-color background screens.

7 Electric Train

Strategy; Dennis Saunders; CS: Train.lzh; GE: 8155; PL: 22249
Shareware: $5.

Put your Amiga on the bedroom floor or under the Christmas tree and play Electric Train for a dose of nostalgia. Lay the track or load an existing setup, then don your engineer's cap. You must control two trains ►

By Linda Barrett Laflamme, with the Gaming Board:

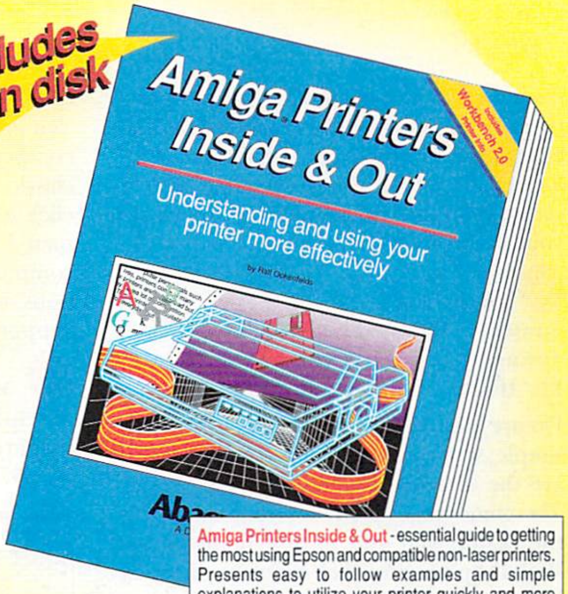
Graham Kinsey, Harv Laser, Peter Olafson, Kevin Rohrer, and John Ryan

ILLUSTRATED BY ISTVAN BANYAI

Amiga Know How

with books from Abacus

New. Includes Companion disk



Amiga Printers Inside & Out - essential guide to getting the most using Epson and compatible non-laser printers. Presents easy to follow examples and simple explanations to utilize your printer quickly and more effectively. 270 pp, with companion diskette.
ISBN 1-55755-087-5. Suggested retail price $34.95

C for Beginners - Introduction to learning the C language. Explains the elementary concepts using many examples. Describes C library routines, how the compiler works, many programming examples. 284 pp
ISBN 1-55755-045-X Suggested retail price $19.95

C for Advanced Programmers - Learn: how compilers, assemblers and linkers work, using Intuition, combining assembly language and C programs, using jump tables and dynamic arrays, designing and more. Includes complete source code for a C based text editor. 650 pp
ISBN 1-55755-046-8 Suggested retail price $34.95

Graphics Inside & Out - Graphic programming in C with examples of points, lines, rectangles, polygons, colors, more. Complete description of the graphic system - View, ViewPort, RastPort, bit-maps, screens & windows. 610 pp
ISBN 1-55755-052-2 Suggested retail price $34.95

Amiga for Beginners - a practical guide to learning the Amiga. Helps you learn the essentials of the Amiga easily and quickly; from opening the box to your first practical application. Introduces you to Intuition, the mouse, windows, the CLI and AmigaBASIC. *Covers Workbench 1.3 Info.* 178 pp
ISBN 1-55755-021-2 Suggested retail price $16.95

System Programmer's Guide - comprehensive guide to what goes on inside the Amiga in a single volume. Includes the EXEC structure, I/O requests, interrupts and resource management, multitasking functions, IFF format, trackdisk, Console & Narrator devices, serial, printer and parallel devices, more. 442 pp
ISBN 1-55755-034-4 Suggested retail price $34.95

Disk Drives Inside and Out - the most comprehensive book yet describing everything you need to know about Amiga disk drives. Learn how to speed up data transfer, how copy protection works, how computer viruses infect your system, the ins and outs of the DOS functions, loading, saving sequential and random files and file organization, boot blocks and technical aspects of the hardware, and more. 346 pp
ISBN 1-55755-042-5 Suggested retail price $29.95

Advanced System Programmer's Guide - follow-up volume of thorough explanations to accessing the facilities provided by the libraries, input and output of the Amiga programming hardware, EXEC structures, multitasking and more. *Covers Workbench 1.3 Info.* 570 pp
ISBN 1-55755-047-6 Suggested retail price $34.95

AmigaDOS Quick Reference Guide - An invaluable, easy-to-use reference tool for beginners and advanced programmers alike. You can quickly find commands by using the three handy indexes designed with the user in mind. Commands in alphabetical order for easy reference. *Covers Workbench 1.3 Info.* 128 pp ISBN 1-55755-049-2 Suggested retail price $9.95

Companion Diskette - Available for all titles except Amiga for Beginners, Desktop Video and AmigaDOS Quick Reference. $14.95 each

Making Music on the Amiga - Shows you how to take advantage of the wonderful musical capabilities of the Amiga with programs and examples including making your own MIDI interface. Includes companion diskette containing dozens of music examples and utilities.
ISBN 1-55755-094-8. Suggested retail price $34.95

AmigaDOS Inside and Out - covers insides of AmigaDOS. Includes reference section, tasks and handling, DOS editors ED and EDIT, create and use script files, multitasking and more. 274 pp
ISBN 1-55755-041-7 Suggested retail price $19.95

3DGraphic Programming in BASIC - details writing 3D graphic programs: ray tracing in all resolutions, light sources and shading and more. 360 pp
ISBN 1-55755-044-1 Suggested retail price $19.95

AmigaBASIC Inside and Out - step-by-step guide to AmigaBASIC. Every AmigaBASIC topic: charts, windows, pulldown menus, files, mouse & speech commands. *Covers Workbench 1.3 Info.* 548 pp
ISBN 0-916439-87-9 Suggested retail price $24.95

Machine Language - comprehensive introduction to 68000 assembler ML programming, covers 68000 microprocessor, speech, sound, menu programming, complete intuition program including Proportional, Boolean and String gadgets. 264 pp
ISBN 1-55755-025-5 Suggested retail price $19.95

Desktop Video Guide - clearly explains how you can harness the video power of the Amiga. Guides you through the confusing jargon and terminology to give you a practical introduction to video production and more. 240 pp
ISBN 1-55755-057-3 Suggested retail price $19.95

More Amiga Tricks & Tips - a collection of easy to use techniques, hints for Amiga owners, disable fast RAM, NewCon and Pipe devices, more. *Covers Workbench 1.3 Info.* 218 pp
ISBN 1-55755-051-4 Suggested retail price $19.95

Tricks and Tips - presents dozens of tips on accessing libraries from BASIC, custom character sets. AmigaDOS, sound, important 68000 memory locations and much more! 342 pp
ISBN 0-916439-88-7. Suggested retail price $19.95

See your local bookseller or

Order Toll Free in US & Canada
1-800-451-4319 Ext. 1211

Abacus
Dept. L11, 5370 52nd Street SE • Grand Rapids, MI 49512
Phone 616-698-0330 • Fax 616-698-0325

Circle 224 on Reader Service card.

from a crawl to runaway speed and keep them from crashing into each other. The appropriate choo-choo sounds are perfectly integrated. This layout is easier to set up than the real thing, and, best of all, your cat won't attack the train.

6 Metro

Strategy; Mark A. Thomas & David P. Townsend; CS: Metro.zoo; GE: 5775; PL: 16106

Picture SimCity for the public domain, with simple, serviceable graphics. In Metro, you are the director of a city's transit system. The game builds a city for you, arranging the residential and employment areas. With the point-and-click controls, you must build transit lines and allocate resources to increase ridership. If you don't, you may find a pink slip in your box.

5 Nakamoto

Arcade; Tom Eshelman; CS: Nakamo.zoo; PL: 20511

An updated version of the C-64's popular JumpMan game, Nakamoto makes you climb and jump your way up vertically and horizontally scrolling screens of ropes and ladders. You'll need a good eye for distance and a steady joystick hand to make it to the top. At least the game gives you super sound to listen to along the way. If you master the existing screens, you can create your own with the built-in editor.

4 MechForce (formerly BattleForce 3.61, BattleFort, and BattleMech)

Action/Strategy; Ralph Reed;
CS: Battle.arc; GE: 7913; PL: 22234;
FF: 273
Shareware: $25.

Giant mechanized robots called Battlemechs fight for territory with you at their helm. On each of the possible 12 missions, up to four computer- or human-controlled teams of seven robots each can play at once. 'Mechs come in different classes, with a variety of capabilities and weapons; choose your machine carefully. The combat area—displayed on 16-color screens—features varying terrains. The game also sports a full Intuition interface and is backed up by appropriate digitized sounds.

3 Monopoly

Strategy; Ed Musgrove; CS: Monopo.zoo; PL: 20174; FF: 251

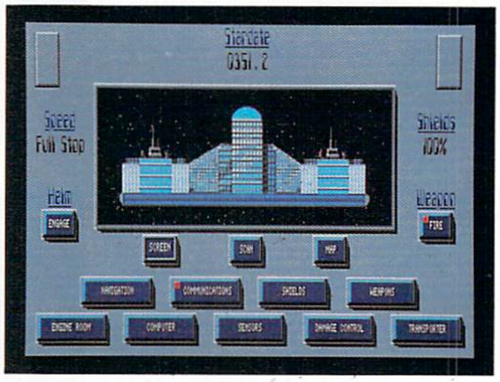
If you want to be a high-stakes real-estate dealer, but don't want to bother keeping track of the money, boot up Monopoly. You and up to three friends can play this computer version of the Parker Brothers classic. No typing or counting needed; just click to roll the dice and watch your animated token move along the board. The computer monitors all the cash transactions, too. All the board-game options are supported.

2 Moria 3.0

Role-playing Adventure; Bryan and Richard Henderson; CS: Moria3.zoo; GE: 5729-30; PL: 15421-22; FF: 194

Few commercial games can match this dungeon-based fantasy's impressive complexity. You must explore the world, battle monsters, and find gold on a quest to penetrate a series of dungeons and defeat the Balrog who is lurking in their depths. You start at the town level above ground, where you load up on supplies, weapons, armor, and magic devices by bartering with shopkeepers. Complete with pull-down menus, pickup mode, continuous-move mode, real-time mode, and message-wait-time mode, Moria keeps getting bigger and better; static atmospheric graphics at appropriate moments are a notable addition for version 3.0.

1 Star Trek: The Game



Action/Strategy; Jimbo Barber;
CS: STTG1A.wrp, STTG1B.wrp, STTG2A.wrp, STTG2B.wrp, STTG2C.wrp; GE: 5872-73, 5875-78, 5886; PL: 16302-06
Shareware: $5.

Why pay for shareware? To encourage programming more first-class games like this one. Based on the original *Star Trek* series, this game casts you in the role of Captain Kirk. After receiving your orders from Star Fleet Command, you embark on a mission, using the simple point-and-click controls. As you complete each one, it reveals clues to your ultimate goal. The missions, usually involving transporting people or valuable cargo, don't seem hard until you factor in unruly Klingons spoiling for a fight (at least you can vary the intelligence of their attack sequences) and your ever-dwindling supply of dilitheum crystals. A beauty to look at (especially its long, spectacular opener) and challenging to play, the game also boasts sound effects and digitized voices of crew members. ■

Public Domain Sources

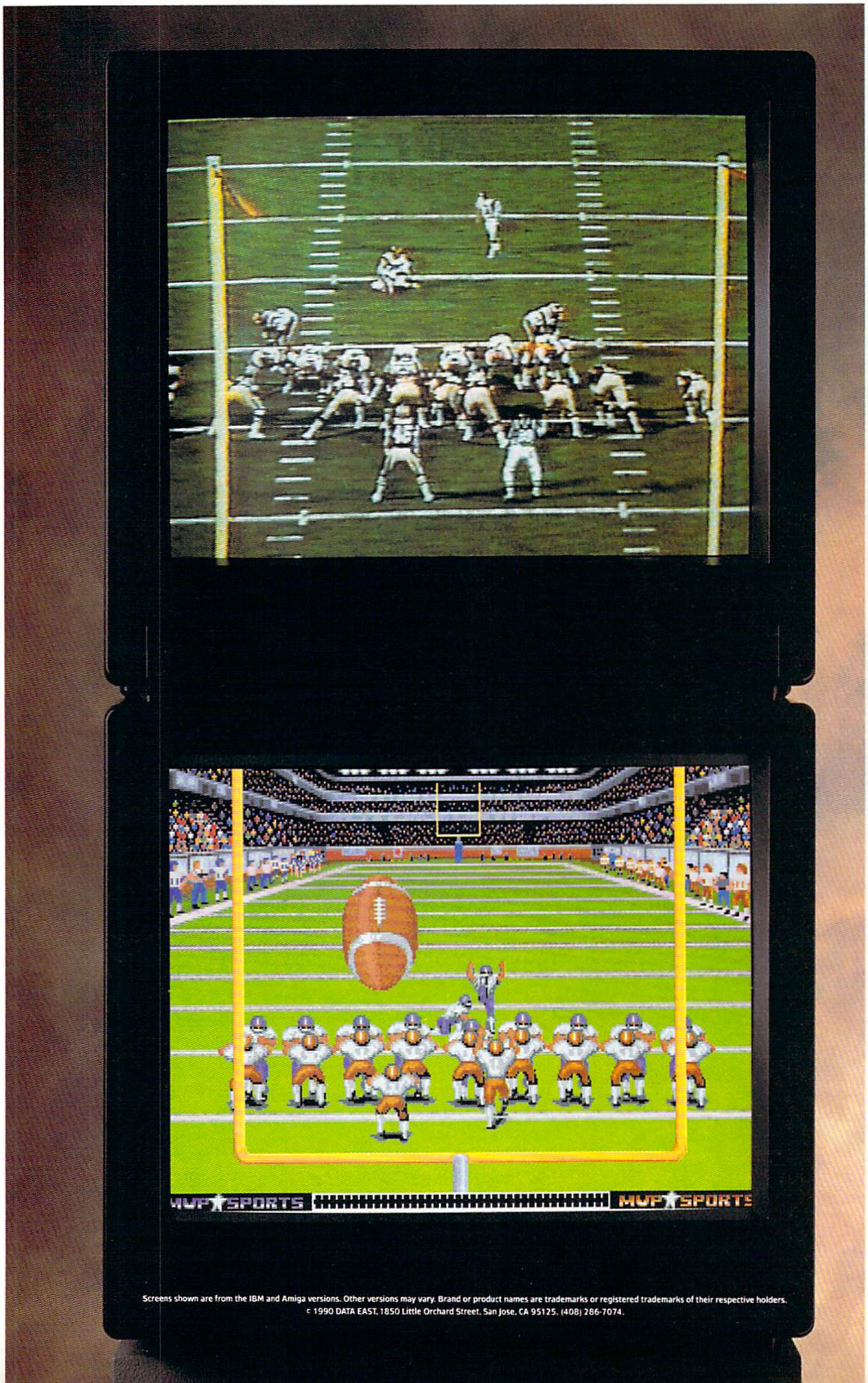
American PeopleLink
800/524-0100 voice
800/826-8855

CompuServe
800/848-8199 voice
614/457-8650 from Ohio

Fred Fish
1346 W. 10th Place
Tempe, AZ 85281

GEnie
General Electric Information Services
800/638-9636 voice

We put in everything but the commercials.



It's fourth and eight. Six seconds on the clock. Your time-outs are gone and you're down by one.

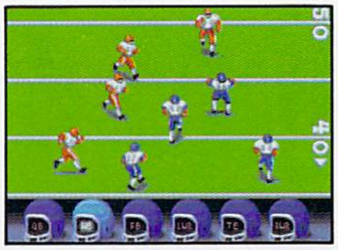
A field goal here and you win it all.

But don't be nervous.

You've only got 20 million people watching you.

This is ABC's Monday Night Football.

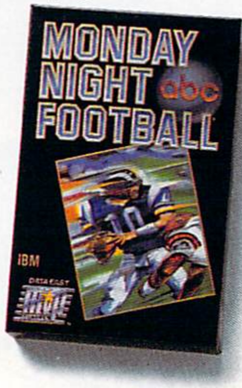
With the best graphics. The best sound. And action so real, Frank Gifford even does the commentary.





It just doesn't get any better than this, guys. Except that you don't have to wait for Monday night to play.

So. Let's see if you can split those uprights...

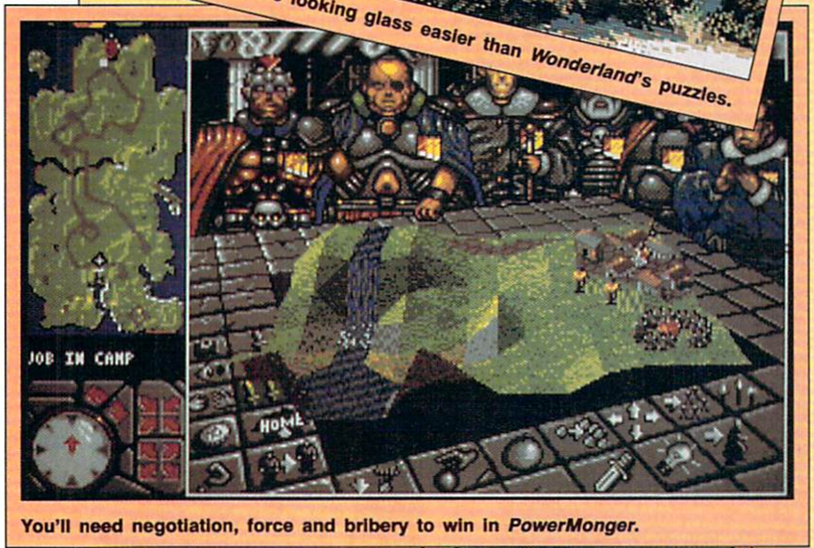


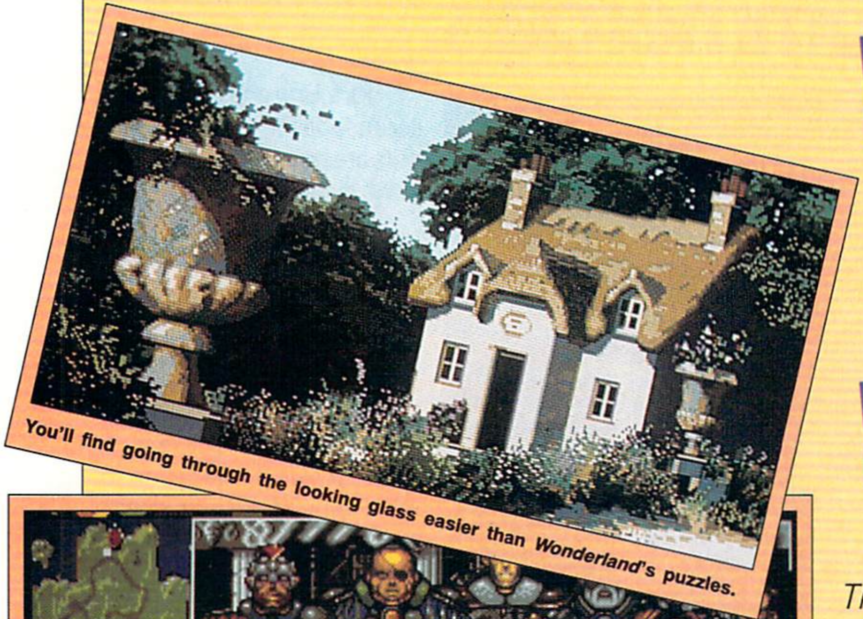
Available for IBM-PC/ Compatibles, Amiga, and Commodore 64.

Circle 233 on Reader Service card.

Winners in the Wings

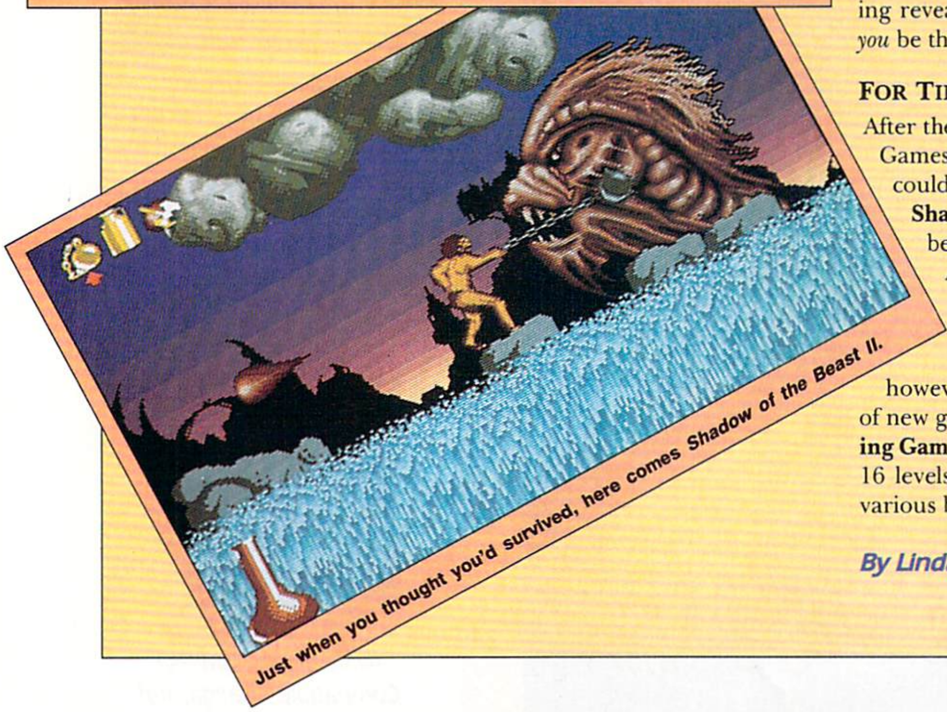
Think you've seen it all? Not so! Game developers still have plenty of new tricks, as this sneak peek proves.





You'll find going through the looking glass easier than *Wonderland*'s puzzles.

You'll need negotiation, force and bribery to win in *PowerMonger*.



Just when you thought you'd survived, here comes Shadow of the Beast II.

BECAUSE GUESSING WHICH games will be hot and which will flop is a risky business at best, we're sticking to investigative journalism and leaving the predictions to Jeanne Dixon. We ferreted out information on early versions of games that will hit the streets "real soon now" (translation from developer-speak: before 1991). Rigorous hours of testing revealed the 15 most promising prospects. Now, *you* be the judge of which will be the biggest winners.

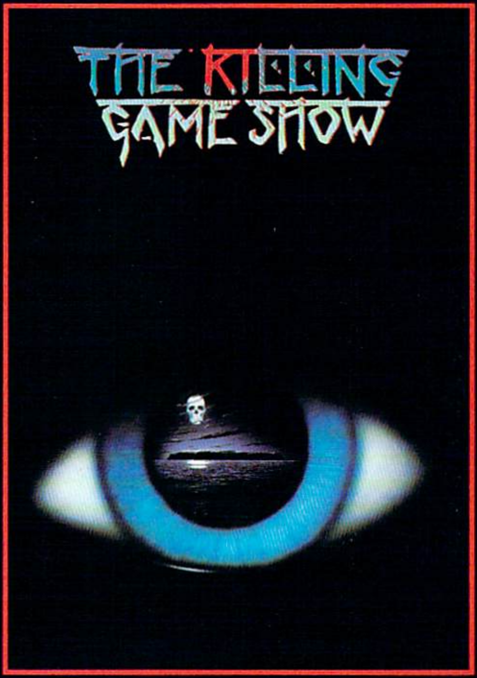
For Tireless Trigger Fingers

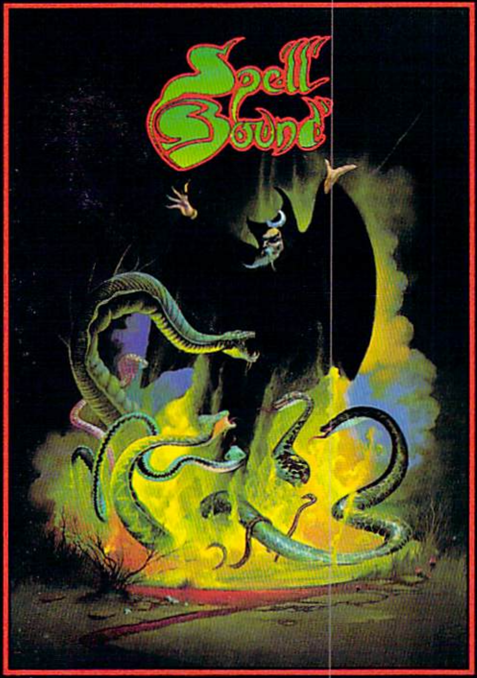
After the mega-hit Shadow of the Beast (see "Top 10 Games" on p. 26), we were doubtful that Psygnosis could release a sequel that was equally impressive. **Shadow of the Beast II** (which should already be on dealers' shelves) proved us very wrong. As sequels go, we think it will be a real lethal weapon, letting you make all those terrible monsters die harder, too.

Not content to rest on their Beast laurels, however, Psygnosis is preparing a whole onslaught of new games. Our favorite among them is **The Killing Game Show**, a superbly crafted shoot-'em-up with 16 levels. The idea is to collect keys that lower the various barriers, letting you progress upward to the ►

By Linda Barrett Laflamme and Lou Wallace













THE BEAST IS BACK!

THE SEQUEL TO THE TOP SELLING AMIGA GAME OF 1989

THE CONFLICT CONTINUES . . .

Your deadly struggle for freedom against the dark forces of the Beast Lord is now but a painful memory. You try to forget the anguish of the past by concentrating on your prize for success in the bloody battle: the return of your humanoid body.

But as you slowly adjust to your newly-won physique, the pain you thought gone is about to return . . . the Beast Mage has kidnapped your sister! She must be rescued before she falls foul of his dark arts. You journey to a hostile alien world to face the malevolent hosts of the Beast Mage and interact with more friendly characters to learn of your unfamiliar surroundings.

You must fight your way through many enemy-infested levels collecting and using weapons and objects to aid your crusade towards conflict with the Beast Mage . . . before he makes your sister his own!

Screen Shots from the Amiga version
AVAILABLE ON THE PSYGNOSIS LABEL

THE KILLING GAME SHOW. . .

. . . WILL HAVE YOU CLIMBING THE WALLS - IT'S THE ONLY WAY OUT!

Suited in limited-protection armour you're the unwilling contestant on THE KILLING GAME SHOW. In front of a TV audience of millions you must battle your way to the top of 16 Pits of Death infested with Hostile Artificial Life Forms specially created by THE KILLING GAME SHOW's manic scientists to give you a hard time.

But . . . don't forget the rising fluid or it's "Next contestant time".

You must give the viewers their value for money — collect the awesome weapons and tools — if you can!

First prize is your life — Don't waste it!

Screen Shots from the Amiga Version
AVAILABLE ON THE PSYGNOSIS LABEL

SPELLBOUND

DON'T GET CAUGHT BY THE WARLOCKS!!

Just as you were about to advance a grade in the school of magic your tutor goes and gets himself kidnapped. You have to rescue him or you'll never graduate.

Battling through eight diverse and dangerous lands, collecting spells and objects along the way, you use your limited magic powers to fight off deadly adversaries in a frought-filled fight to free your tutor.

But it's going to be a tough task on your own: take a friend along to increase your chances and double the fun!

Screen Shots from the Atari ST version
AVAILABLE ON THE PSYCLAPSE LABEL

PSYGNOSIS
29 Saint Mary's Court,
Brookline, MA 02146
Telephone: (617) 731-3553
Fax: (617) 731-8379

SHADOW OF THE BEAST II – Amiga
THE KILLING GAME SHOW – Amiga
SPELLBOUND Amiga/Atari ST

Circle 123 on Reader Service card.

PSYGNOSIS

level's top. Succeed, and you move on to the next.

Special-effect tokens are hidden throughout each level; some offer special powers or weapons, while others are red herrings. You can carry only one item at a time, so choose carefully what to pick up. Don't stop to think, however; the deadly flood waters are always rising. Do shoot everything that moves, and blast anything that doesn't get out of your way. A novel feature is the ability to automatically replay all or part of your last life and specify where to start over. Psygnosis' signature graphics, multi-level scrolling, and excellent sound and music round out the package.

When you need a break from killing monsters, try zapping aliens. **Awesome** is a vertically scrolling, high-speed blastfest in space. Instead of encasing you in a mechanized robot like The Killing Game Show, Awesome puts you at the helm of a spaceship. It also gives you larger targets.

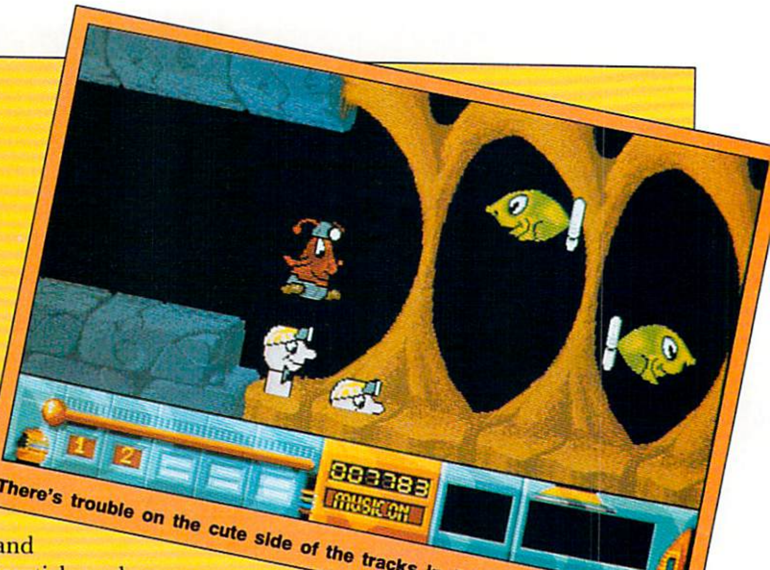
For a total change of pace, Psygnosis, the masters of the dark-edged and destructive, are releasing **Puggsy** and **CutiPoo**. More like animated cartoons from Saturday morning TV than the company's usual violent arcade games, the pair still offer quite a bit of enjoyable action. In addition, they're appropriate for young audiences.

Evening Entertainment or Evening News?

Rugged commandos only need apply to Taito's arcade offering. Fresh on the heels of Operation Wolf (and just in time for the real trouble in the Persian Gulf) Taito brings us **Operation Thunderbolt**. You must free 23 hostages from the clutches of the volatile General Kadam (no kidding!) in Northern Africa. Like Wolf, it's a kill-or-be-killed scrolling arcade game, with eight increasingly difficult missions, digitized sound, and coming-at-you graphics. It supports mouse and joystick and one or two players. We liked it a lot.



Better looking than Wheel of Fortune and harder than Jeopardy, it's The Killing Game Show.



There's trouble on the cute side of the tracks in Puggsy.

For the adventurous type, Taito offers **Castle Master**, a real-time game of exploration. In it, your goal is to rescue your twin from the evil Castle Master who is trying to enslave your spirits. The graphics looked interesting, and the 3-D motion was well done.

No I.D. Required

Accolade is working on more down-to-earth themes. The first on tap is **Bar Games**, a tongue-in-cheek look at the singles scene. Try your hand at five "exotic" sports. Air Hockey puts you at the opposite end of the table from increasingly skilled opponents. In Wet 'n' Wild (a do-it-yourself, wet T-shirt contest) you must dump buckets of water on the willing women walking on stage. Liar's Dice pits you against a bluffing, buxom barmaid in a game of chance, while Last Call casts you as a bartender sliding beers to thirsty patrons. Our favorite is Pick-up Artist, in which you must use your silver tongue to charm three lovely ladies hanging around the bar. (Strangely enough, Linda was much better at this.)

For a more sedate and cerebral evening's entertainment, try Accolade's **Ishido**, a Shanghai-style board game. You place matching tiles on a board (instead of removing them, as in Shanghai). Scoring is based on the final number of tiles on the board.

Too tame? Accolade also caters to your gruesome streak. **Elvira, Mistress of the Dark** combines exploration, combat, and puzzle solving in a graphically intense horror game with a sinister soundtrack. Your goal is to find the six keys that open the chest containing The Scroll of Spiritual Mastery. If you acquire it first, you can rid the castle of its evil denizens. If the evil Queen Emelda gets it in her clutches. . . shudder the thought. (Note: This one is not for those with weak stomachs, as it contains scenes of very graphically depicted gore.)

White Rabbits and Red Spots

Gentler adventurers will better appreciate Virgin

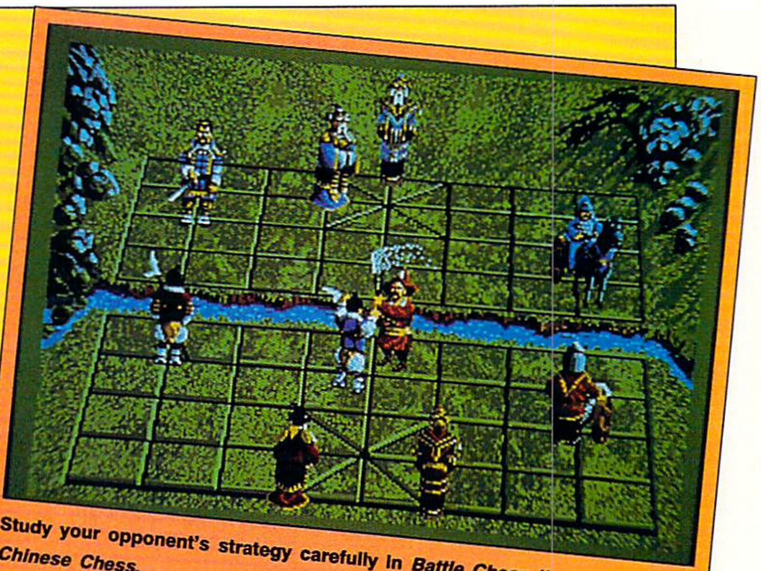
Mastertronic's **Wonderland**. A beautifully rendered adventure game based on Lewis Carroll's *Alice in Wonderland*, Wonderland has a properly baffling story line. From the little we've seen, this one promises to be a winner, full of puzzles and mysteries.

If TV commercials are more your style than children's classics, wait for **Spot**, a board-like game that is vaguely reminiscent of Othello. Don't worry, Virgin Mastertronic has spiced it up with plenty of cute animations, starring 7-Up's Spot, the wonder dot.

Too small a scale? Conquer a few planets in Virgin Mastertronic's **Overlord**, an involved combination of strategy and role-playing elements. You explore space, settle planets, and develop their populations, resources, wealth, and defenses. While helping your planets to peacefully prosper is a big job in itself, you must also build strongholds to repel the inevitable alien invaders. At least they (and all the other graphics) are nicely rendered.

Ancient Strategy

Capturing the king is a simpler, if not easier, goal in **Battle Chess II**, from Interplay. This time the contest is based on Chinese Chess and sports more detailed animation and multiple difficulty levels. If you can't beat the computer, try playing with a friend via modem.



Study your opponent's strategy carefully in *Battle Chess II: Chinese Chess.*



Shake, rattle, and roll in *Bar Games.*

Interplay supplies a whole band of friends in **Lord of the Rings, Vol. I**. Grab your old lantern and adventurer's sack and immerse yourself in Middle Earth. Acting in the role of Frodo the Hobbit, you try to protect the One Ring from Sauron's Dark Riders. While you must complete a series of tasks based on events in Tolkien's book, your troop may include adventurers that were not in the original story.

For Those Who Want It All

What holiday season would be complete without a game from Electronic Arts? This year the company is releasing the latest gem from BullFrog Productions, programmers of Populous. In **PowerMonger**, you are cast as the leader of a homeless tribe that arrives in unfamiliar territory. Your goal is to conquer all of the two hundred territories that make up the world. PowerMonger uses much of the simulation software technology developed for Populous, but includes more features, such as inventing, bribing, and negotiating with other commanders. The inhabitants of your world are also more diverse; they include fishermen, farmers, ranchers, and a variety of animal life. With so much to keep track of, the game's simple iconic interface is extremely welcome. If you are a fan of Populous, you'll feel right at home here.

While Linda was more intrigued by this one than Lou, we did agree on one point. The hardest part of all these games is waiting for the final versions. ■

Manufacturers' Addresses

Accolade
550 S. Winchester Blvd.
San Jose, CA 95128
408/985-1700

Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
415/571-7171

Interplay Productions
3710 S. Susan, #100
Santa Ana, CA 92704
714/545-9001

Psygnosis
29 Saint Mary's Court
Brookline, MA 02146
617/731-3553

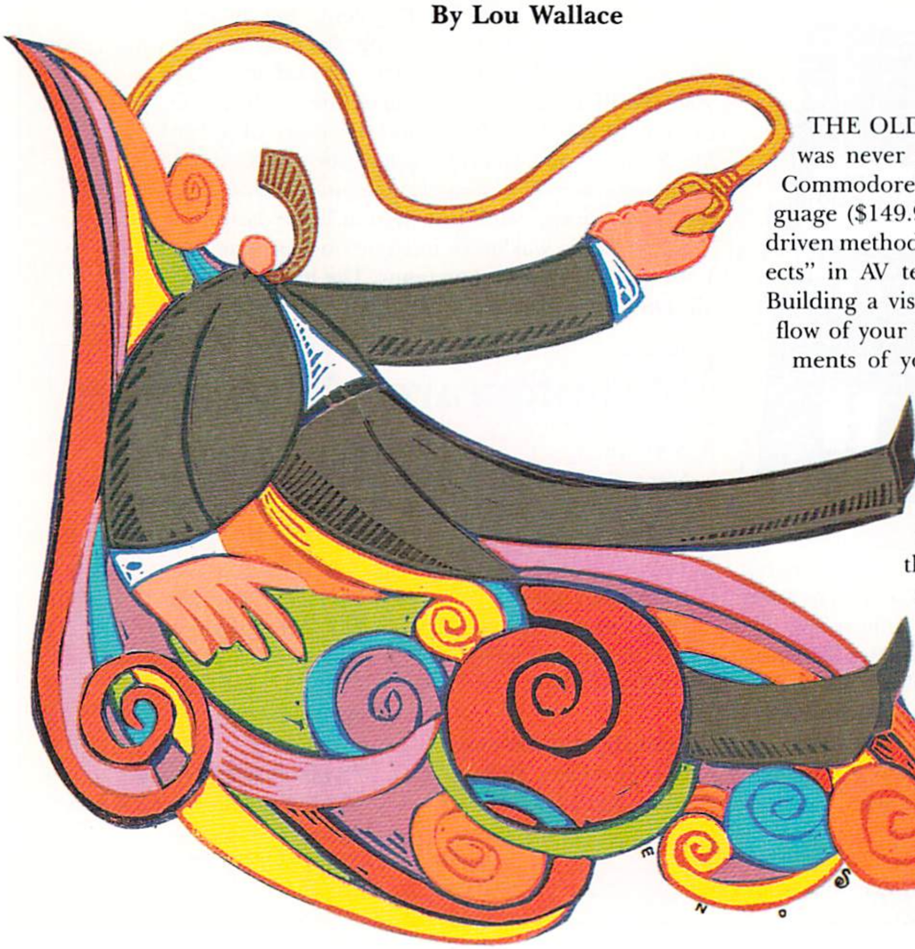
Taito Software Inc.
267 West Esplanade
North Vancouver, B.C.
Canada V7M 1A5
604/984-3344

Virgin Mastertronics
18001 Cowan, Suites A & B
Irvine, CA 92714
714/833-8710

Go with the Flow!

AmigaVision's icon-based, visual-flowchart approach to multimedia is so easy that you'll be authoring projects like this one before you can say "point-and-click."

By Lou Wallace

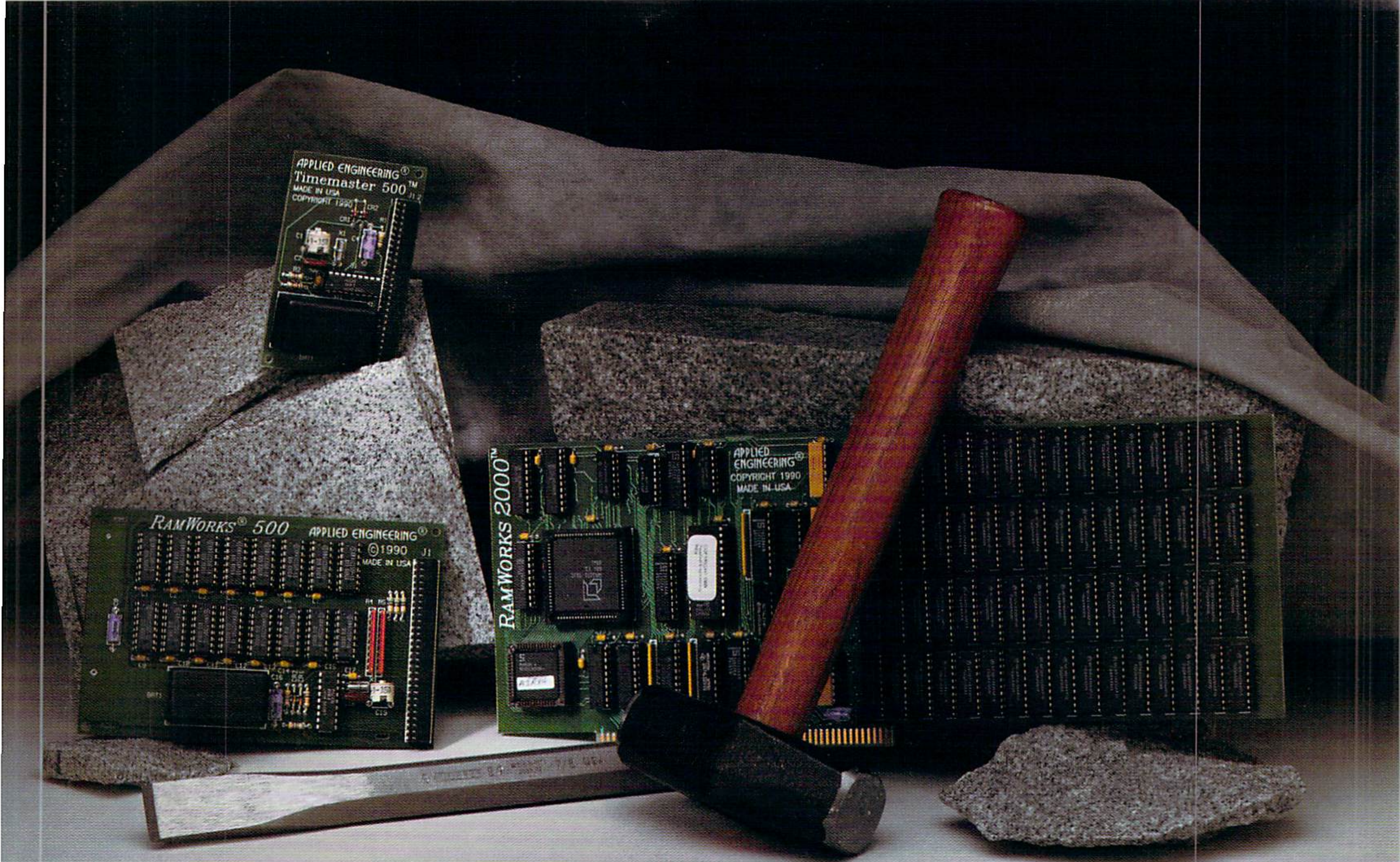


THE OLD ADAGE "a picture is worth a thousand words" was never more true than when it comes to working with Commodore's **AmigaVision** (AV) multimedia authoring language ($149.95). The system's stylish user interface and icon-driven method of creating applications (called "courses" or "projects" in AV terminology) is a lesson in clarity and economy. Building a visual flowchart of icons that represents the logical flow of your application, you can assemble all the diverse elements of your presentation—text, pictures, speech, sound, music, video, animation, and so forth—and define each of their attributes in a simple, highly intuitive manner.

Our "picture...thousand words" adage not only best describes the structure of AmigaVision, but it also points out the best way to *show* you how the program works. After all, if you have not yet seen AmigaVision in operation, it would be very difficult to convey with words alone just how such a graphics-oriented authoring language functions in creating an application.

For this article, I have constructed a relatively simple multimedia project that I will employ as a visual tutorial to demonstrate how to use AmigaVision in creating your own presentations. (If you do, however, also want a more traditionally descriptive account of what AmigaVision is, see "Welcome to a New Generation," p. 18, June '90.) The complete ►

ILLUSTRATED BY RANDALL ENOS



The art of memory engineering.

Introducing the art of memory engineering. With the Amiga's practically unlimited potential, often the only barrier to greater productivity is a lack of memory. Adding expansion memory to your computer opens doors to new capabilities. But knowing how much to add and how to add it can be a real headache.

For Amiga 2000s, 2500s and 3000s, Applied Engineering's new RamWorks 2000™ (above, at right) is the definitive memory expansion solution. The board was engineered to incorporate 256K x 4 dynamic random access memory (DRAM) chips. That's a significant improvement over chips used on other boards because it gives you growth-path choices. You can add memory in large increments or smaller, more affordable increments of 512K at a time. And you can add these small increments all the way up to 8 MEGs.

Ease of use is also important. Many memory expansion boards require the user to configure tiny switches or jumpers in a trial and error fashion to suit their particular hardware. RamWorks 2000 has an intuitive on-board feature that automatically configures your setup — making it much easier to install and upgrade. No switches, no jumpers — just add memory and go.

We also designed RamWorks 2000 to be fully compatible with the A3000, so if you decide at some future date to upgrade your computer, you can switch the card over. RamWorks 2000 carries a *five year warranty*. **RW 2000 w/2 MEGs $273. Additional MEGs $72.**

For Amiga 500s with 512K, we designed the RamWorks 500™ (above, at left). Combining the functions of an internal 512K memory card and clock card, RamWorks 500 boosts the A500's available RAM to 1 MEG. We incorporate 256K × 1 DRAM chips to make RamWorks 500 fully compatible with ALL A500 hardware and software, including pre-1989 machines. The built-in clock function automatically time and date stamps your files and a graphical diagnostic program checks for bad or improperly seated chips. *Five year warranty.* With 512K installed $79.

For the new A500 Professional with 1 MEG built-in, Applied Engineering designed Timemaster 500™ (above, top). An easy way to add clock funtions to your files, Timemaster 500 quickly attaches to the A500-P's expansion slot. Your files are then automatically time and date stamped for easy reference. *Five year warranty.*

For ten years, Applied Engineering has forged a reputation for exciting and innovative peripherals. Built to our own exacting standards of quality and reliability, our products are backed by the best warranties and the best technical support in the business.

Order today! To order or for more information, see your dealer or call (214) 241-6060 today, 9 am to 11 pm, 7 days. Or send check or money order to Applied Engineering. MasterCard, VISA and C.O.D. welcome. Texas residents add $8^1/_4$% sales tax. Add $10 outside USA. Dealer inquiries invited.

Applied Engineering®
The enhancement experts.
A Division of AE Research Corporation
(214) 241-6060
P.O. Box 5100
Carrollton, TX 75011
Made IN THE USA

sample program—plus many of the specific menus and requesters required to put it together—are included here and will be presented step-by-step.

Put a Spin on That Big Red Cue Ball, Mister!

In brief, our sample AV project is designed to allow the user to select an image of the planet Jupiter from a pictorial menu of the solar system. When selected, the Jupiter "hot spot" will trigger a full-motion video sequence of Jupiter spinning on its axis, accompanied by a music soundtrack.

The application itself is a fully interactive multimedia presentation. It uses a variety of Amiga graphic images, digitized sounds, and full-motion video (from laser disc), and it plays an Amiga SMUS music file. Figure 1 shows the entire sample application in icon format as it appears in the AV Flow window (which is the "canvas" on which you create the application). Double-clicking any of these icons brings up a requester associated with that particular segment of the program. In effect, you use the requester to define the icon.

For example, Figure 2 shows the Module Icon requester (right) that appears on screen when you click the main Module icon in the Flow window (left) for our Jupiter program (labeled here as "Sample Multimedia Program"). As with nearly all of the requesters for the icons in our program, you can define its attributes almost entirely by simply clicking on the various gadgets—very little keyboard input is required.

In assembling the Jupiter program, I used a CAV (Constant Angular Velocity) format video disc containing various planetary images and digitized animations from NASA's Voyager space missions (the disc is available commercially). I then preloaded this data into memory—along with some sound and music files—as shown in Figure 3A. Next, I digitized individual planetary images in HAM mode using FrameGrabber ($699.95, Progressive Peripherals & Software), and then combined them into one picture

Text continues on p. 46

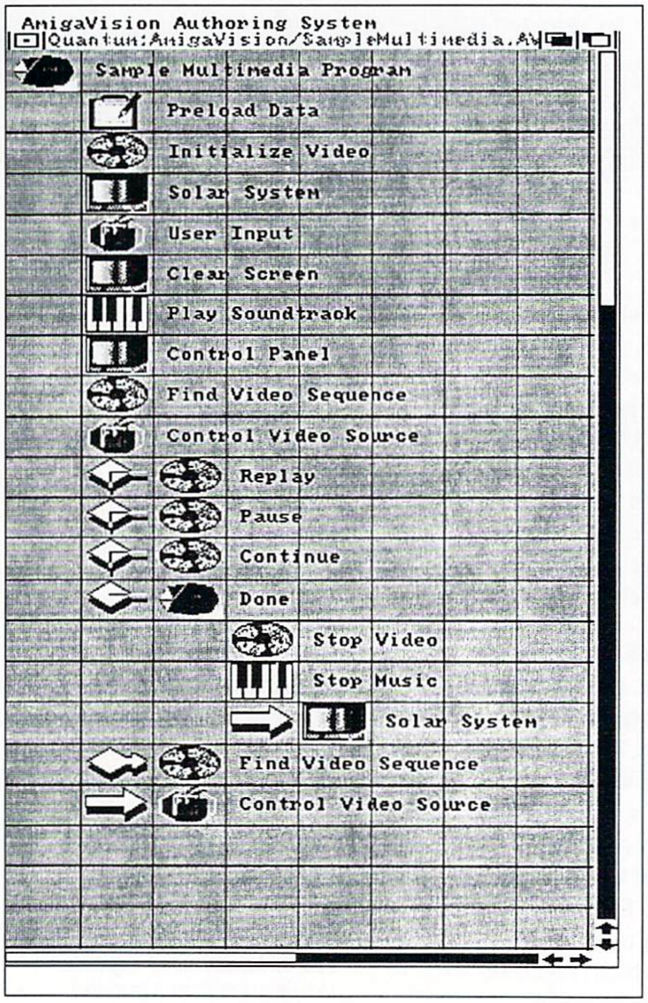


Figure 1. The complete "course" in flowchart format for the Jupiter sample multimedia program as it appears in the AV Flow window.

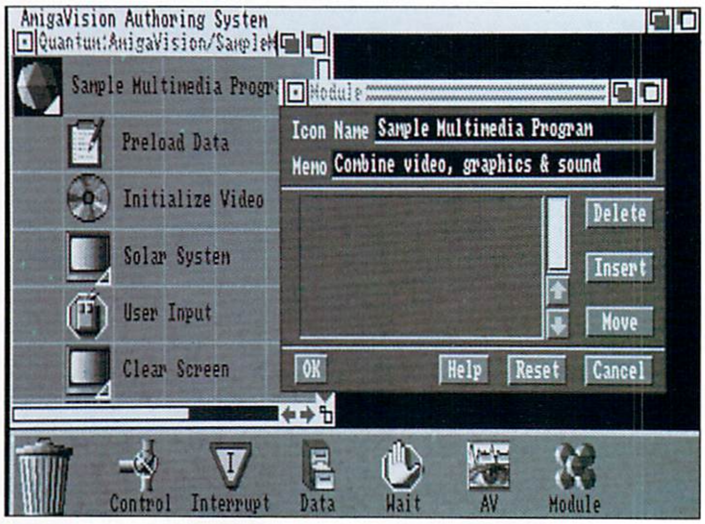


Figure 2. The Module Icon requester. Its icon (shown at the top of the Flow window to the left of the requester) acts as the parent for all icons in an AmigaVision flowchart.

Defining Icon Requesters in the AmigaVision Jupiter Sample Application

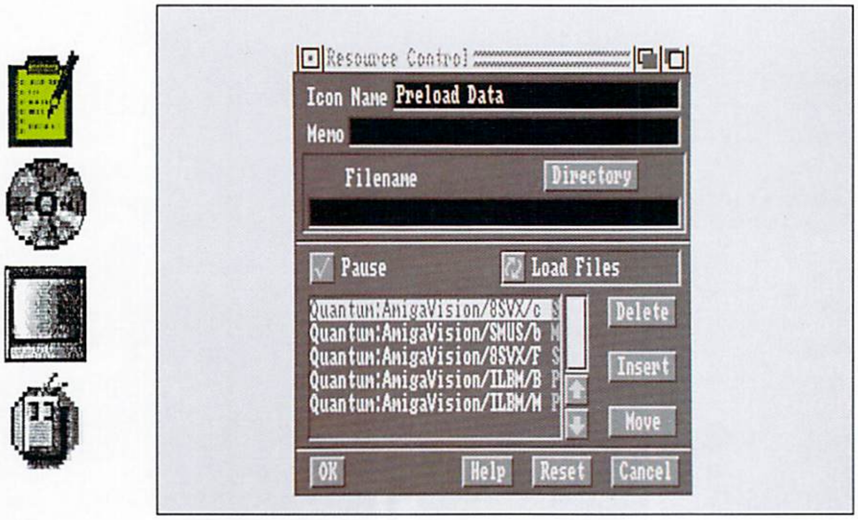


Figure 3A. The Resource icon (labeled Preload Data in our sample program) allows you to preload (and also unload) data files—graphics, sound, animations, and musical instruments—such as the DMCS music soundtrack used in our application. Once loaded via the Resource Control requester pictured here, they can be accessed by other icons. If you do not enable the Pause button, AmigaVision can be loading data while executing other tasks, allowing Amigas with limited RAM resources to utilize large amounts of disk-based data while still generating seamless presentations.

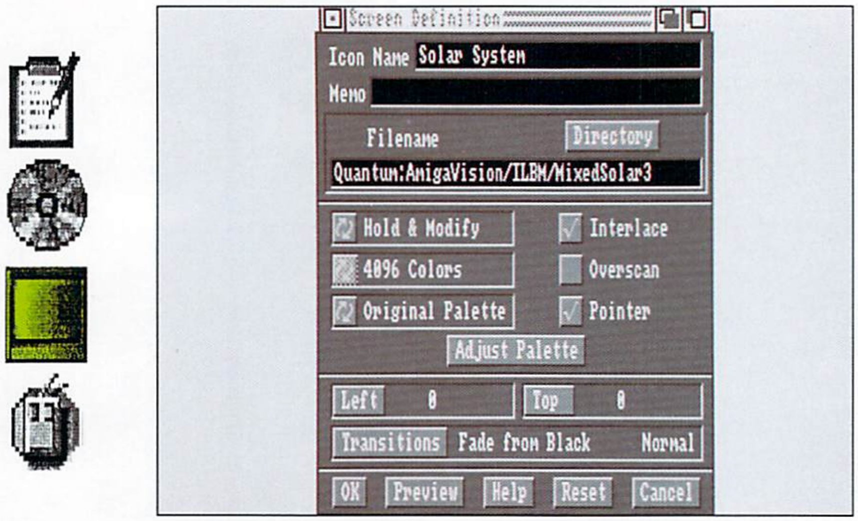


Figure 3B. The Screen icon (labeled Solar System) is used to load and display IFF images, such as the digitized solar-system composite image I used for my main menu. All screen modes are supported, including HAM and Extra_Halfbrite displays. The Screen icon affords precise control over how and where the image will be displayed. Its Screen Definition requester also allows you to choose from many different transitions. In this case, I have the solar-system picture appearing as a fade from black.

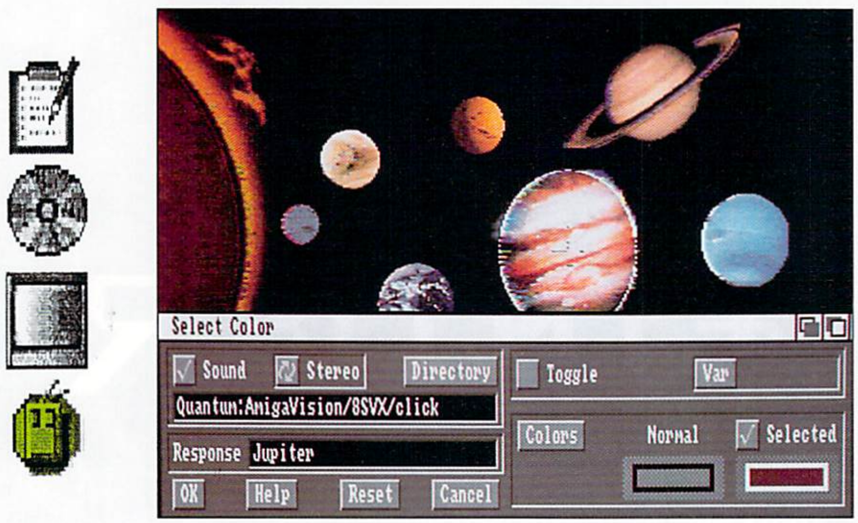


Figure 3C. Having used the Mouse icon (labeled User Input) from the AV Wait submenu, and its requester, I am now working inside the AV Object Editor. I have already added a circle "hot spot" around Jupiter, having selected Circle from one of the various pull-down menus available. Here, in addition to defining the hot spot, I have chosen a digitized feedback sound (a click) and feedback color (red with a white outline). I have also entered "Jupiter" in the Response gadget, so that each time a user clicks on this spot, the Response() function will return the word "Jupiter" to my program, verifying the selection.

Figure 3D. In the requester for the Music icon (labeled Play Soundtrack) I have entered the instructions for playing the SMUS music file. In the Filename gadget, I have selected "bridge.smus" as my song—a DMCS version of "Bridge Over Troubled Waters." The Pause button has not been enabled, so program execution continues as the music plays. I have also selected Loop, which means the song will repeat until the presentation is ended.

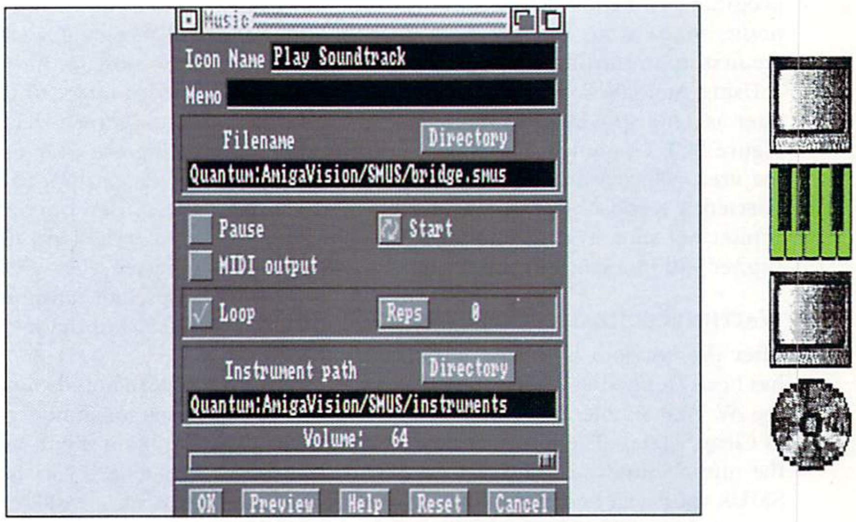


Figure 3E. The Video icon (labeled Find Video Sequence) controls the laser-disc player. Here, in its requester, I have instructed it to turn on video and play frames 33596–34115, which is the sequence where Jupiter is rotating. Pause has not been enabled, so again program execution continues during the entire time this sequence is playing.

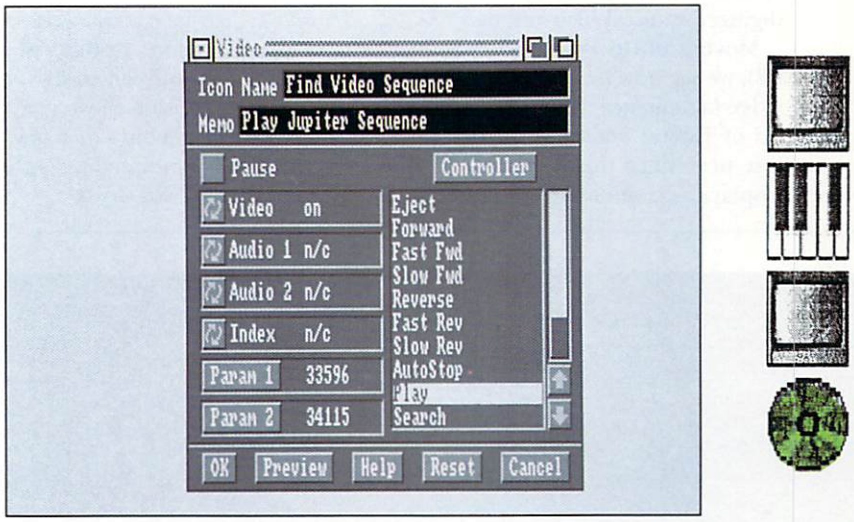
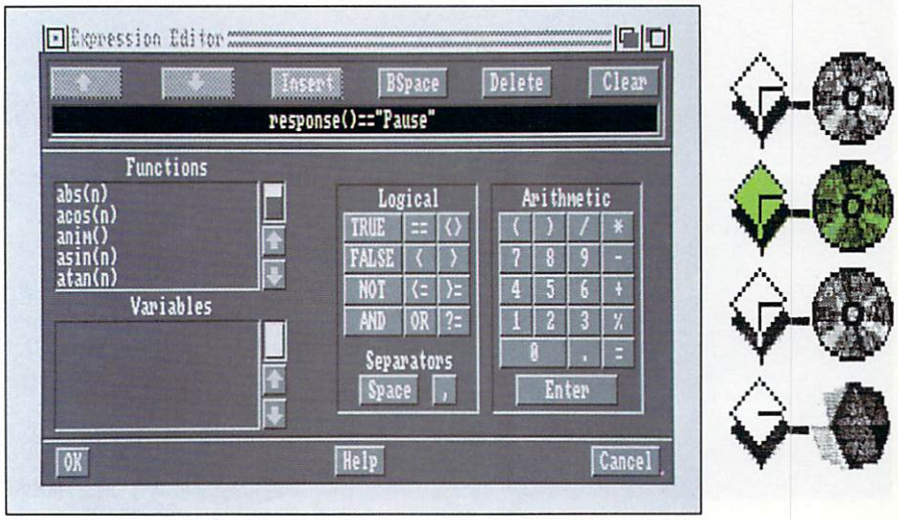


Figure 3F. Through one of the If. . .Then. . .Else icons, I am now working in the AV Expression Editor. Here, I am checking the Response() function to see if the user clicked on the Pause button in the DeluxePaint control-panel screen image I genlocked over the video signal. If this expression evaluates as true, i.e., if the user clicked on the Pause button, then another Video icon acting as a partner with the If. . .Then. . .Else icon will pause the laser disc on the current video frame.



From p. 42
using Digi-Paint 3 ($99.95, NewTek). Loading the digitized HAM picture of the solar system into the program (see Figure 3B), I could now use this composite image as my main menu—what the user will see first upon starting the application.

Using AmigaVisions' Object Editor, I defined Jupiter as a hot spot by drawing a circle around it (see Figure 3C). I assigned a digitized sound (a click) to the area, which would serve as feedback, and also selected a feedback color. When a user selects the Jupiter hot spot, a "click" sound will be played, and Jupiter will momentarily change into a solid color.

Waiting on Ready for the Show To Begin

After the hot spot is clicked, program flow—which has been stopped at User Input (a Mouse icon from the AV Wait submenu)—continues on past that icon to Clear Screen. The screen is cleared, and we begin the music soundtrack (see Figure 3D)—a standard SMUS music file, created with Deluxe Music Construction Set (DMCS) ($99.95, Electronic Arts), using digitized musical instruments.

Moving on to Find Video Sequence (see Figure 3E), we see how the program initiates the full-motion video (a sequence from the laser disc showing a close-up of Jupiter rotating). At this point—via the icon just preceding this Video icon—the program also displays a screen image I created in DeluxePaint III ($149.95, Electronic Arts). This image, a simple control panel with buttons, allows the user to pause (freeze) the image, continue, replay, or quit. I genlocked this image on the screen using Commodore's A2300 Genlock Card ($399).

So now we have Amiga-generated music playing, a video image of Jupiter playing from laser disc, and the on-screen DeluxePaint image of the control panel giving the user final control over the whole multimedia extravaganza. Figure 3F demonstrates one of these user options—Pause—whereby the program pauses the laser disc on the current video frame. If the user selects Done (the quit button), the video disc stops, the music ends, and the entire presentation returns to the solar-system main menu.

With not too much more time and effort, you could easily make hot spots for all the planetary images in the main menu and create a different presentation sequence for each one. (In fact, I have already done just that—with very impressive results.) A full-scale interactive multimedia application like this would have taken weeks, or even months, to complete using more traditional programming methods. With intuitive, icon-driven authoring systems such as AmigaVision, however, you will find that in just a matter of hours or a few days, you can create sophisticated multimedia applications you never dreamed you could do. ■

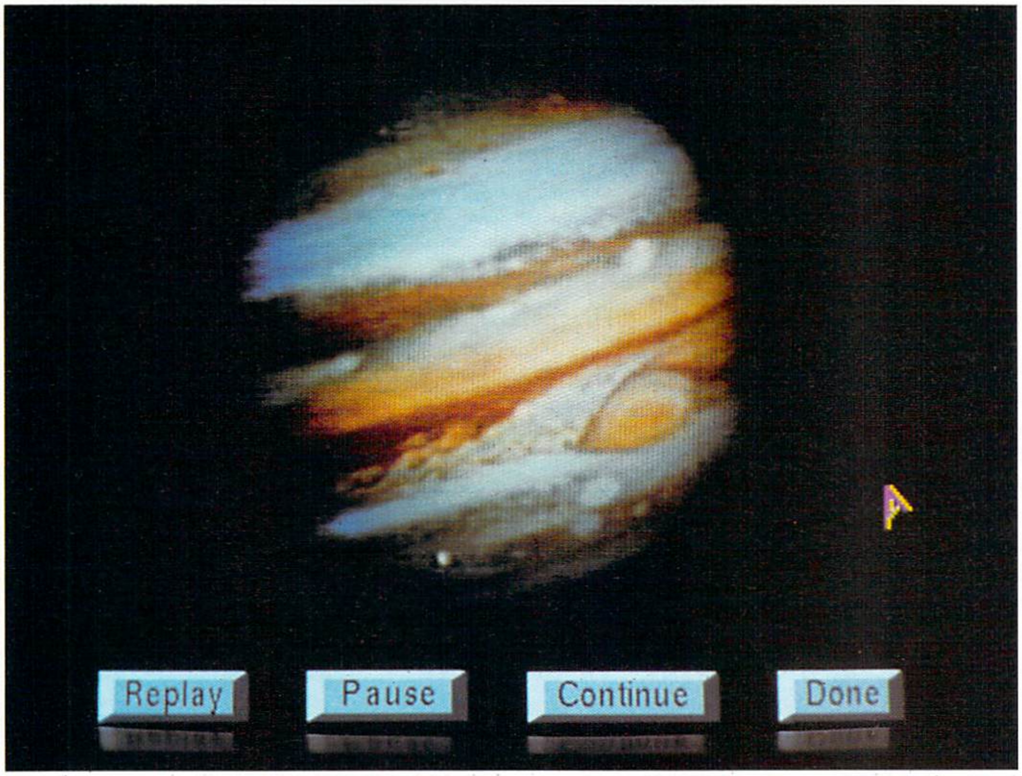


Figure 4. A freeze-frame from the laser-disc sequence the user sees after selecting Jupiter from the solar-system main menu. A music soundtrack plays as the planet spins merrily away.

GVP Announces a Technological Breakthrough...

SERIES II™

THE NEXT GENERATION

in SCSI and RAM Controllers for the A2000®



IMPACT Series II

GVP's New SERIES II A2000 SCSI and RAM Expansion Controllers provide the ultimate hard disk and RAM expansion solution for the A2000. Choose from two new models:

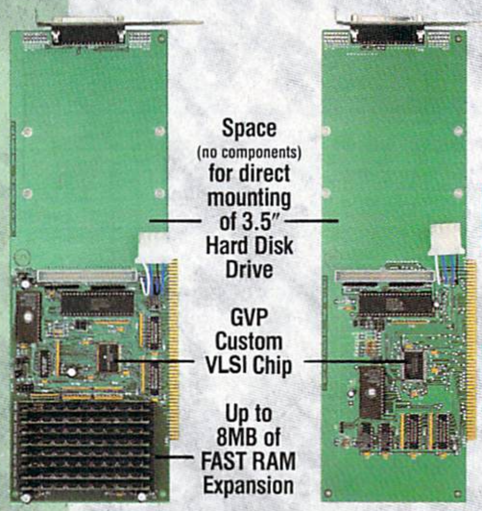
The Series II A2000 SCSI "Hard-Disk + RAM-Card"

- **State-of-the-Art integration** packs a high performance SCSI controller, 8MB FAST RAM Expansion and a 3.5″ hard disk drive INTO A SINGLE A2000 EXPANSION SLOT!! Saves BOTH a valuable expansion slot and a peripheral bay!
- **Incredible SCSI hard disk performance** achieved through GVP's innovative new custom chip design, which provides DMA performance and unique direct dual port memory access to FAST RAM, eliminating typical DMA side effects under heavy graphics load.
- **Easy-to-install SIMM memory modules** allow flexible memory configurations from ZERO through 8MB. Supports 6MB FAST RAM configuration for BridgeBoard users.
- **NEW *FAAASTROM*™ SCSI Driver** offers optimum performance and includes such features as:
  - ✓ Supports virtually any SCSI device including, CD-ROMs, Tape Drives, IOMEGA Bernoulli drives, etc.
  - ✓ Fully implements SCSI Disconnect/Reconnect protocol, allowing overlapping SCSI commands to be executed.
  - ✓ Fully implements Commodore's Rigid Disk Block (RDB) standard as well as the new DIRECT SCSI interface standard.
  - ✓ Removable media drive support. Automatically senses cartridge changes and informs AmigaDOS, ensuring safe and reliable use of removable media SCSI drives.
  - ✓ Allows Direct AUTOBOOT from Fast File System Partition.
- **New INTUITION COMPATIBLE SCSI installation** and "tuning" utility included. Major features include:
  - ✓ ICON and gadget based INTUITION interface.
  - ✓ Bad Block Remapping of hard drives.
  - ✓ Auto or manual hard drive partitioning and AmigaDOS formatting.
  - ✓ Read and modify existing RDB parameters on hard disk.
  - ✓ Simplest and Easiest SCSI installation in the industry.
- **Low parts count (through VLSI Integration) EQUALS:** lower power, higher reliability, longer life and ultimate PRICE/PERFORMANCE! See TRADE-UP offer.

The Series II A2000 SCSI "Hard-Disk-Card"

- **Same as above** but without the 8MB FAST RAM capability.
- **Specially designed** for those users who don't need memory expansion but still need maximum hard disk performance at a budget price.
- **UNBEATABLE VALUE.** See $99 trade-up offer!

Hard-Disk+RAM-Card **Hard-Disk-Card**



GVP's New *FAAASTROM* SCSI driver and installation software is also available as an upgrade kit for GVP's original IMPACT SCSI controllers, for ONLY $49.95. Offers major performance increase over previous GVP AUTOBOOT EPROMs.

New Series II 48MB Removable media hard disk drive. GVP now also offers the NEXT GENERATION removable media hard disk drive which offers increased capacity (48MB formatted) and major technological advances in cartridge air flow filtering design and robustness. Call for details.

SCSI TIMES 1990

The ULTIMATE Trade-Up Offer???

GVP today introduced its new Series II product line and announced a bold new trade-up program, which is certain to further bolster GVP's dominant market share in the Amiga hard drive market.

Details of GVP's new TRADE-UP program are as follows:

- For $109 plus $6 for shipping (USA only), end-users can trade-up to the new GVP Series II SCSI "Hard-Disk-Card" (without drive) by simply sending in their present SCSI controller (from ANY manufacturer) together with a money order or certified check, payable directly to GVP.
- All trade-in controllers must be sent to GVP FREIGHT PREPAID.
- Owners of any GVP or Commodore SCSI controllers, are eligible for an additional $10 rebate, if they trade-in a FULLY FUNCTIONAL and working controller. These owners need to submit a certified check/money order for $105 only.
- For an additional $39, existing controllers can be traded-up to the new Series II "Hard-Disk + RAM-Card," which includes the 8MB FAST RAM expansion capability, populated with ZERO RAM.

"Let's Standardize"

GVP

Educational pricing program now available.

GREAT VALLEY PRODUCTS INC.
600 Clark Avenue, King of Prussia, PA 19406

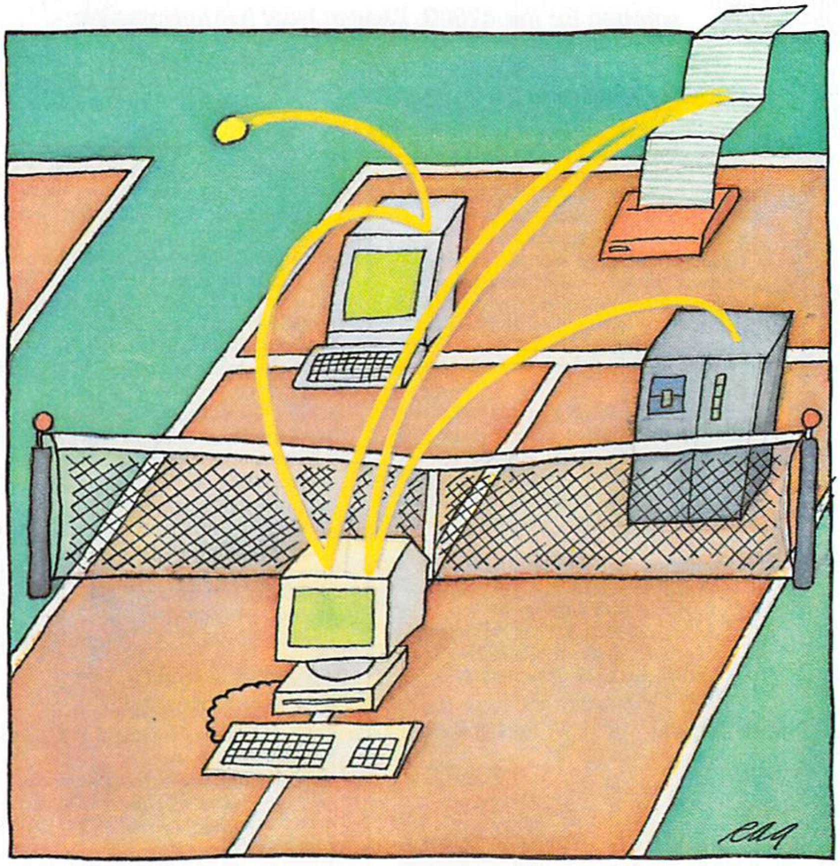
For more information, or for nearest dealer, call today. Dealer inquiries welcome.

Tel. (215) 337-8770 • FAX (215) 337-9922

Dealers Circle 145 on Reader Service Card

Consumers Circle 62 on Reader Service Card

PLAYING CLOSER to the NET



DESPITE ITS ADVANCED graphics, unparalleled multitasking, and sophisticated selection of software, the Amiga drops its advantage in one crucial area of world-class computing play: networking. This weak spot in the Amiga's game is keeping the machine off a good many corporate courts—as well as limiting the possibilities for Amiga owners to share data and applications.

All that, however, may be about to change, given Commodore's recent commitment to place the Amiga squarely in the corporate marketplace. With CBM and others introducing networking equipment that supports such major hardware schemes as Ethernet and Arcnet—and such popular protocols as Novell, AppleTalk, DECnet, and TCP/IP—networking appears destined to be a part of the Amiga's future.

FUNDAMENTALS OF NET PLAY

So what is so special about networking? On the simplest level, networks permit the sharing of equipment. Having several employees use a common printer, modem, hard drive, streaming-tape back-up system, or even a floppy-disk drive is much more cost effective than buying one of each for every individual.

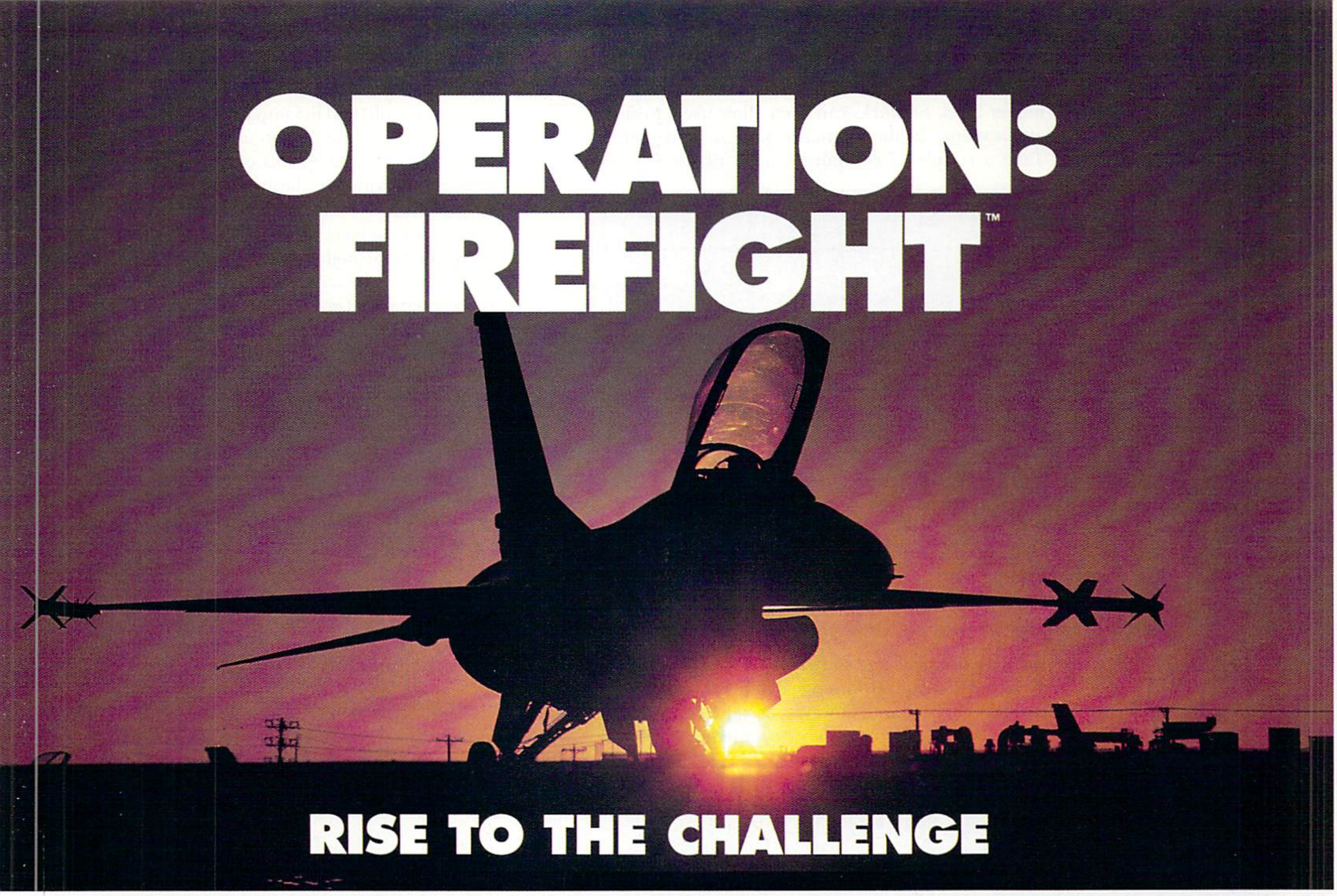
The ability to pass messages is another key benefit of networks. If you have ever used an E-mail system, you can understand the simple beauty of leaving a message or list of instructions for someone who is otherwise engaged without playing phone-tag or physically meeting. E-mail alone can make an office much more efficient.

In addition to sharing equipment, networked co-workers can easily transfer and share files. For example, everyone can update the customer database or peruse the same documents without the usual mountain of photcopies. At a ►

Recent product announcements from both Commodore and third-party developers may move the Amiga into the forecourt of the corporate networking game.

By Doug Barney

ILLUSTRATED BY RICHARD A. GOLDBERG



You're a war-hardened F-16 fighter pilot supplementing ground forces in an enemy-infested hot spot. Your mission: annihilate enemy tanks, trucks, MiGs, Hinds, pontoon bridges, and supply lines—fast!

12 NEW MISSIONS

These new heart-pounding missions are guaranteed to test the skill of even the most seasoned Falcon pilot.

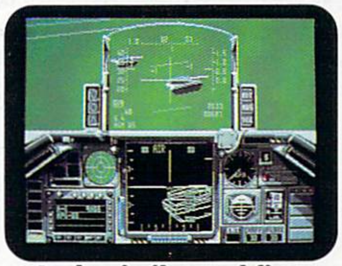
Wield new weapons and equipment. Air-to-air radar-guided missiles, high-speed anti-radiation missiles, and radar jammers. Achieve tank superiority, and you'll earn the Medal of Honor.

Operation: Firefight. The challenge continues...



FALCON MISSION DISK II

ORIGINAL FALCON™ PROGRAM REQUIRED TO RUN FALCON MISSION DISKS.



Lock missiles and fire. Maverick turns enemy tank into instant scrap.



Down oncoming Hind 'copters before they destroy your tank platoon.

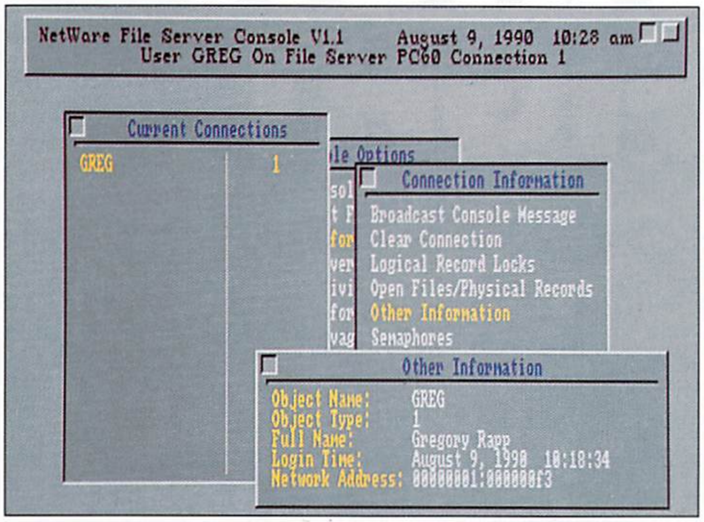
Spectrum HoloByte™

A Division of Sphere, Inc.
2061 Challenger Drive, Alameda, CA 94501, (415) 522-0107

AVAILABLE FOR AMIGA® AND ATARI® ST™

Circle 141 on Reader Service card.

higher level, networks can even allow users to share applications. In theory, networking is quite simple. Take a couple of computers, a bit of wire, a net-



Commodore network administrator utility for Novell Network.

working protocol, and software that understands that a network exists. Choosing a network can be immensely complicated, however, because you are faced with a bewildering variety of competing hardware, conflicting protocols, and incompatible operating systems. In short, there are far too many "standards."

To try to get a handle on this confusing situation, let's examine individually the basic elements of the networking setup.

The hardware connecting computers serves as the physical medium through which data passes. Popular hardware schemes include Arcnet (a low-cost, medium-performance network), Ethernet (fast and often used with Unix, DEC, and in other large-system environments), Token Ring (typically found at IBM corporate installations), and LocalTalk (for the Apple family). (For more detailed information on each of these networks—and on the network protocols mentioned in the next paragraph—see the "Networking Glossary" that accompanies this article.)

The software comprises both the protocols—which allow programs on separate computers to communicate—and the programs that manage, or control, the network. Popular protocols include AppleTalk (Apple II and Macintosh systems), DECnet (usually specific to Digital Equipment Corp. computer sites), Novell NetWare (popular in corporate environments), and TCP/IP (used with Unix).

An Impressive Rally

Commodore is taking a relatively sweeping approach

Networking Glossary

AppleTalk As you can imagine, AppleTalk is a scheme designed by Apple aimed primarily at the Macintosh. The system often uses the relatively slow (0.3 Mbps [megabits per second]) LocalTalk hardware, but has grown in popularity because of its low cost, ease of use and installation, and general reliability.

Arcnet A middle-of-the-road hardware solution in terms of performance and price, Arcnet uses a so-called modified token-passing scheme. Under a typical scheme, a token is passed along each node. Only the node possessing the token can send a message. Under the "modified" approach, each node acknowledges receipt of the token. Arcnet automatically reconfigures as nodes change.

Client Refers to the workstation's relationship to the server.

Database Server Intelligent way of storing database files. The server can sort and manipulate data prior to sending to node.

DECnet DECnet is a networking architecture that links Digital Equipment Corp. systems, from large minicomputers to workstations, and is based upon Ethernet hardware.

Ethernet A relatively fast system, Ethernet is popular in DEC and Unix environments. Operational speeds are around 10 Mbps, or one million characters per second.

FDDI (Fiber Distributed Data Interface) An evolving standard for 10-Mbps, fiber-optic cable networks.

Fiber Optic A highly advanced form of cabling that uses light to transmit data. This allows for very long distances between nodes.

File Locking Protects shared files by allowing only one user at a time to make changes.

File Server Nonintelligent way of storing files. Files are stored remotely, but all querying and data manipulation occur on the node. In addition, all activity is controlled by the file server. Some file servers are dedicated, which means that the system is only used as a server. Others are nondedicated and can be used as workstations.

Gateway A hardware/software combination that links systems with different protocols.

Interoperability The ability of devices from a variety of vendors to share data and communicate effectively.

ISDN (Integrated Services Digital Network) ISDN specification describes the replacing of an analog telephone network with a digital medium. Under ISDN, phone lines can simultaneously handle image, video, voice, and text data.

LAN (Local Area Network) A group of personal computers networked together.

Network Management Software that controls LAN access and network resources.

NFS (Network File System) A portable (able to be moved from system to system) file-server system used mostly in Unix workstation environments.

Node The physical workstation attached to a network.

AMIGA PROFILE

Net Worth

INSTEAD OF TWIDDLING his corporate thumbs until more sophisticated Amiga connectivity tools materialize, **Chris Hertel** is blazing a trail. As senior programmer and head of PCs for the international banking firm of Credit Agricole (CA) in Chicago, Hertel is in the vanguard of enthusiasts seeking to place Amigas in the corporate world.

Using a combination of TSS Net (Syndesis), Dale Luck's X11 X-Windows system (GfxBase), and the A2065 Ethernet Adapter (Commodore), Hertel ties Amigas into the bank's mammoth network of DEC VAX minicomputers, workstations, and PCs. Currently, many of CA's workstations run X-Windows, a Unix-oriented graphical interface (similar to the Amiga in that regard) that taps the power of both the workstation and larger, more powerful machines.

The Amiga ties in when Hertel begins to quote figures. DEC VT 1000 workstations that can run X-Windows tend to run around $3000 (not including the additional cost for X-Windows). With the Amiga, Hertel can do it for less *and* have the added power of a graphics-based, fully multitasking computer.

According to Hertel, the Amiga running TSS Net and X11 is only a "research vehicle." If Hertel has his way, however, Amigas will be serving as hubs of relatively low-speed Star networks (networks where all data requests are passed through a single machine) that would then request data from the larger VAX minicomputers. If the machine clears these hurdles, Hertel wants to put Amigas on the desks of the bank's executives.

Although generally impressed with the Amiga products, Hertel still faces one or two difficulties. For instance, the Amiga meets with some resistance, particularly as DEC does not officially support the product. As if this reason alone were not enough, Hertel admits he "can't find a service contract anywhere. I have to learn to do it all myself." □

—DB

to networking, considering the combination of hardware and software it announced earlier this year. Hardware debuts included the **A2065 Ethernet Network Adapater** and the **A2060 Arcnet Network Adapter**. On the software side, the **AS220** Amiga client for Novell NetWare and the **AS225** for TCP/IP and NFS standards also made welcome appearances.

Innovative third parties have also rolled up their sleeves in the networking arena. Chief among current third-party products are AppleTalk- and DECnet-compatible systems. Progessive Peripherals' **DoubleTalk** and DigiFex's **Interact** make up the AppleTalk contingent, while GfxBase, Interworks, ASDG, and Syndesis

Text continues on p. 54

Novell A networking protocol very popular in IBM-oriented corporate environments.

OSI (Open Systems Interconnection) A networking standard for interconnecting disparate computer systems strongly supported by DEC.

Protocol A software method that allows programs on separate machines to communicate. Protocols define signal type, how the signals are received, and the physical arrangement of the network.

Record Locking Protects shared database records by allowing only one user at a time to make changes.

SNA (Systems Network Architecture) A complicated, still-evolving set of standards from IBM. The ultimate goal of SNA is to allow dissimilar systems to work together effectively on a "peer-to-peer," or equal, basis.

TCP/IP (Transmission Control Protocol/Internet Protocol) A networking protocol with broad support deriving from its ability to connect disparate hosts. Generally used with Ethernet hardware, TCP is also popular within Unix environments. The Internet Protocol (IP) originated as a US Dept. of Defense protocol developed for the ARPANET network, and was then revamped for Unix.

Terminal Emulation The ability of a personal computer to act, generally via modem, as a terminal to a host system.

Thick-Wire Ethernet A form of Ethernet that uses relatively thick, twisted-pair wiring. Thick-wire Ethernet, which requires a transceiver at each node, is more expensive than thin-wire Ethernet. Thick-wire carries signals over a greater distance that thin-wire.

Thin-Wire Ethernet Generally uses coaxial cable, a thin wiring, and can also run over twisted-pair. Thin-wire does not require a transceiver on each machine.

Topology The physical layout of a LAN. There are three major topologies, Bus, Ring, and Star. With a Bus network, all computers are connected via a single linear cable. Data is sent back and forth across the bus or cable and is captured by specific machines. In a Ring network, all computers are connected by a cable that forms a ring. Data is passed along the ring until captured by the target computer. In a Star network, all computers are connected to a central computer that acts as a communications node. All communications must pass through this central computer.

Wide Area Network A network in which devices are widely separated.

X-Windows A graphical user interface for Unix, developed at MIT, that many firms, including DEC, have made a standard. Essentially a graphics display server, X-Windows is the opposite of most client server systems where the workstation is the client and the larger machine is the server. X-Windows depends upon the power of the server to support the interface, while the back-end or client system provides data processing and manipulation. □

—DB

Amiga Networking Products

HARDWARE

A560 Arcnet Network Adapter
Commodore
Price unavailable

Provides full Arcnet bus protocols over Arcnet bus topology networks (HIT module). The A560 connects to the A500's bus via an 86-pin connector on a female BNC connector. Allows up to 256 nodes, with a maximum distance of 2000 feet between nodes. This autoconfigured, 2.5 Mbps Arcnet, local-area network board comes with 2KB of buffer memory, a power supply, and an internal connector for optional 1MB RAM expansion.

A2060 Arcnet Network Adapter
Commodore
$229

Provides Arcnet bus protocols over Arcnet bus topology networks (HIT module). This 2.5 Mbps, autoconfigured card connects to the bus internally via a 100-pin connector, supports up to 256 nodes no further than 2000 feet apart, and features a socket for optional autoboot ROM. It also provides buffered memory to enhance inter-system communications. The A2060 comes with a BNC "T" connector, a BNC-to-BNC cable, and an 93 ohm network terminator.

A2065 Ethernet Network Adapter
Commodore
$349

Provides ANSI 802.3 type Ethernet protocols over thick and thin connections and runs at 10 Mbps. A 32K onboard RAM buffer provides shared RAM between the Am7990 processor and the A2000. The autoconfigured card connects at the 100-pin internal bus connector with a 15-pin female "D" connector for thick Ethernet/Cheapernet with 100 nodes per segment, or a female BNC connector for thin Ethernet/Cheapernet networking with 30 nodes per segment. The A2065 features DMA data reading and writing to shared RAM and operates at 10 Mbps.

A2232 Multi-Serial Port Board
Commodore
$399

A multi-serial port board, the A2232 provides seven additional RS-232 ports for connecting devices such as terminals, laser-disc players and touch screens. The card connects internally at the 100-pin bus connector. Each eight-pin mini-DIN connector is provided with an adapter cable for conversion to standard DB-25.

AIP-2000 Package
GfxBase
$795

Runs at standard 10 Mbps and utilizes 32K of onboard buffer for incoming and outgoing data; provides thick and thin Ethernet.

A-Net
Great Valley Products
A2000: $699; A500: $749

Ethernet (thick and thin) network controllers for the A500 and A2000. IEEE 802.5 standard types A and B, 10 Mbps transfer rate, with 16-bit data path addressing. Supports up to 30 stations with total cable length of up to 600 feet of thin Ethernet co-axial cabling. Comes with 16KB of onboard static RAM, allowing DMA directly to or from the network A2000 controller; also has DMA sequencer allowing DMA transfers direct from or to memory.

Comports 8
Amigo Business Computers
$379

An A2000 card with two channels connected on external male connectors, one 25-pin and one 15-pin, and six channels on two internal connectors for an 8-channel RS-232 communications interface. The autoconfigured card provides the capability for up to 40 channels (with five boards) and features a baud rate selectable up to 57.6K and a buffer size up to 64K.

DoubleTalk
Progressive Peripherals
Under $500

AppleTalk-compatible network for A2000, A3000 and A500. Features a high-speed mode, promising that an Amiga-only network will run at twice the speed of a standard AppleTalk network. Any Amiga can function simultaneously as a file server, printer server, or client. A dedicated system server is not required. The DoubleTalk card comes with a phone jack network adapter and provides an additional serial port with its own CPU and 512K of ROM for performing complex operations.

Dual Serial Board
ASDG
$249.95

A single-slot A2000 series- and A3000-compatible board. Provides two AT-compatible asynchronous serial ports with driver software.

Dual Serial Module
ASDG
$199.95

An IEEE 959 module compatible with the Twin X board. Provides two asynchronous serial ports with full driver software.

ENLAN
Interworks
$295 (base)

Phase-IV end-node implementation of DECnet networking. Allows the exchange of files and data with DEC VAX/VMS computers or other Amigas running the DECnet protocol. Comes with a VT100 terminal emulator. Supports both thick- and thin-wire Ethernet on A2000s and higher.

Interact
DigiFex
$299.99 (A500), $329.99 (A2000)

A hardware and software AppleTalk networking system that has the capability to create an Amiga-only network with up to 32 nodes and can connect your Amiga

or Amiga-only network to an AppleTalk-compatible laser printer. The A500 package comes with an external RS-422 serial expansion port peripheral with passthru. The A2000 version is a combination of Interact software (see Interact) and a stand-alone MultiPORT board (see MultiPORT).

LANRover
ASDG
Price not available

An Ethernet board for A2000 series and A3000s, conforming to IEEE 802.3 standard and featuring DMA, a 16-bit data path, and on-card memory management. Supports both thick and thin Ethernet connectors.

MCS 1000
Comspec
$205 (Canadian)

IEEE printer interface.

Microshare MCS 8004/8008
Comspec
$627/$821 (Canadian)

Allows up to eight computers to share a printer. The system includes a despool feature which enables whoever is using the printer at a given time to cancel output without affecting other users, and also a top-of-form feature that helps individuals identify their own output. Comes with a built-in 256K buffer.

MultiPORT
DigiFex
$249.95

A stand-alone expansion card required for using Interact with the A2000 (see Interact in the software section, below). Provides a nine-pin RS-232, a 25-pin parallel printer, and an RS-422 serial port. The serial ports can be reconfigured for a MIDI device.

Serial Solution
Checkpoint Technologies
$199

Adds 25- and 9-pin serial ports.

The Serial IV + Card
Expert Services
$299.95

Adds four serial and one parallel port.

Twin-X
ASDG
$329.95

General purpose I/O board that serves as a dual IEEE 959 interface board. This A2000-compatible card can host any two standard or one double-wide IEEE 959 modules available on the market. Provides a standard autoconfigured interface to the Amiga, allowing its modules to autoconfigure under KickStart from 1.2 and later.

SOFTWARE

AS220
Commodore
$149

This Amiga client goes by the official name of Amiga Networking Software for Novell NetWare. It gives the Amiga the capability of utilizing Commodore's A2060 adapter to communicate with Novell Networks running Novell NetWare, version 2.15 or higher. The software features password security and provides the user with two interfaces: a text-oriented interface or the Amiga mouse-based interface. Users can employ the Amiga's multitasking feature to simultaneously run other programs under AmigaDOS and/or the MS-DOS with Amiga Bridgeboard options.

AS225 TCP/IP and NFS Software
Commodore
$199

Provides the Amiga with the ability to connect to DoD and other networks that support either TCP/IP or NFS standard packet-switching protocols.

Interact
DigiFex
$79.95

AppleTalk networking software that allows you to send Amiga text and graphics output to an AppleTalk-compatible laser printer. Requires DigiFex MultiPORT Board (see hardware section).

Middleman
Benaiah Computers
$59.95

A VT100 terminal emulator that supports numeric keypad graphics and baud rates from 300 to 19,200.

Middleman II
Benaiah Computers
$149.95

Tekronix 4105 color terminal emulator.

TSSnet
Syndesis
$395

DECnet and X-11 (X-Window implementation from GfxBase) support for the Amiga. TSSnet can communicate over both Ethernet and the serial port, and provides multiple concurrent sessions between Amiga tasks and those running on any other nodes.

X-11
GfxBase
$395

Implementation of X-Window System, version 11, from the MIT X-Window Consortium. Offers the capability to access host-based applications. Supports local X-based applications, AS225, and color.

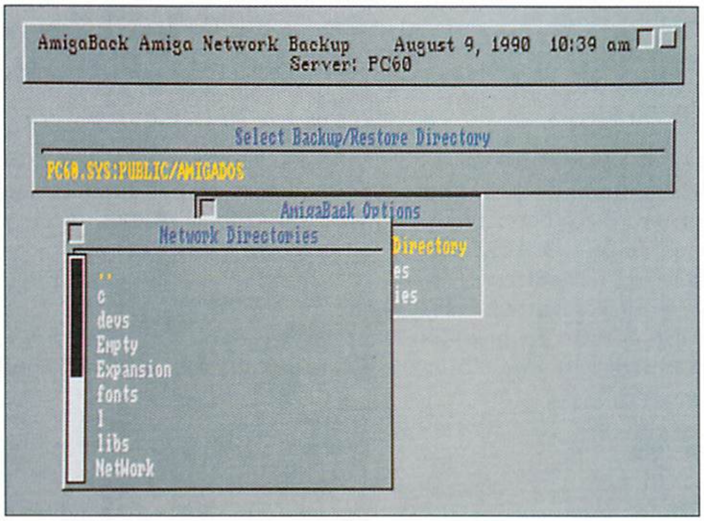
X-11 Programmers Toolkit
GfxBase
$250

An implementation of X-Window System client programming interface. Provides client application programming access to the network transparent and operating system. The Toolkit consists of the MIT Xlib interface libraries, including the higher-level MIT Xt intrinsics library adapted to compile native Amiga clients using the Lattice 5.0 C Compiler. □

From p. 51

provide DECnet-compatible Ethernet systems.

The reasons for AppleTalk support are fairly obvious. Despite its relatively slow operational speed in the Apple arena (owing to the LocalTalk Apple hardware), it is a low-cost system with a reputation for ease of use and reliability. In addition, in an Amiga-only setup with Amiga networking hardware, the AppleTalk system will function at considerably faster speeds.



Commodore back-up utility for Novell Network.

But why DECnet? Perhaps Commodore and others are simply following Apple's lead. One of Apple's first and foremost networking goals has been to connect with Digital Equipment's VAX computers, because many DEC sites also have large installations of Macs, which are used primarily in scientific and design capacities. With at least similar—and probably better—potential offered by the Amiga, it is easy to see why there is now a proliferation of Amiga-to-DECnet products.

On still another route, Commodore's AS220 software system allows the Amiga to work with Novell-based networks. Renowned for its high performance and flexibility, Novell's NetWare software is a huge success, and corporations flock to the Orem, UT-based firm. With a properly installed Novell network, Amiga users can take advantage of all the cost-effective networking benefits mentioned previously. In addition, software updates can occur on the server, rather than on each personal computer. Amiga users can also share data and computer resources with other personal computers on the network, including Macintosh and IBM PCs, as well as IBM mainframes, Sun workstations, and DEC VAXes. (Keep in mind, however, that Commodore's Novell implementation requires the installation of a nonAmiga computer—generally a fast IBM PC or compatible—to act as the server. The Amiga can only access information as a client.)

Commodore, however, is testing the AS220 software with Arcnet and Ethernet schemes. Picking up the Ethernet ball, Oxxi has an add-on device driver under development that, according to company representatives, will allow third-party Ethernet cards—such as those from Hydra, GVP, and ASDG—to run with the Commodore software. Currently, you can ►

Manufacturers' Addresses

ASDG
925 Stewart St.
Madison, WI 53713
608/273-6585

Benaiah Computer Products
PO Box 1147
Huntsville, AL 35807
205/536-9933

Checkpoint Technologies
PO Box 2035
Manassas, VA 22110
703/330-5353

Commodore Business Machines
1200 Wilson Dr.
West Chester, PA 19380
215/431-9100

Comspec
74 Wingold Ave.
Toronto, Ont.
Canada M6B 1P5
416/785-3553

DigiFex
610 Main St.
Oregon City, OR 97045
503/656-8818

Expert Services
5912 Centennial Circle
Florence, KY 41042
606/371-9690

GfxBase
1881 Ellwell Dr.
Millpita, CA 95035
408/262-1469

Great Valley Products
600 Clark Ave.
King of Prussia, PA 19406
215/337-8770

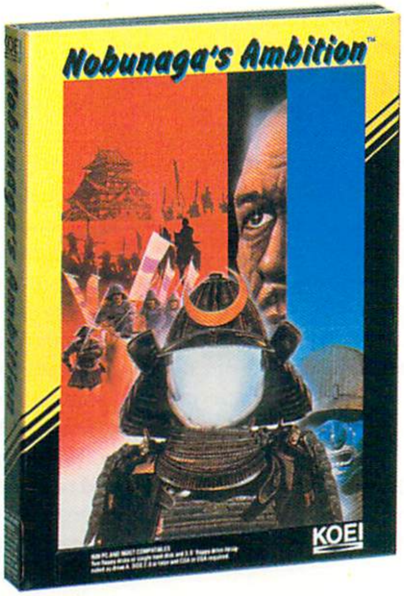
Interworks
195 E. Main St., Suite 230
Milford, MA 01757
508/476-3893

Oxxi Inc.
PO Box 90309
Long Beach, CA 90809
213/427-1227

Progressive Peripherals
464 Kalamath St.
Denver, CO 80204
303/825-4144

Syndesis
N9353 Benson Rd.
Brooklyn, WI 53521
608/455-1422

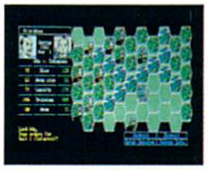
The Destiny of a Nation is in Your Hands



Nobunaga's Ambition is now available for Amiga, PC and NES



Main Screen



Battlefield Map



Ending Screen

Sixteenth Century Japan was controlled by feudal lords. Each ruled a single fief, each wanted to become Shogun and rule the entire nation. One man, Oda Nobunaga, came close but failed. He paid the penalty for failure, death.

Take Nobunaga's place and unite Japan. On the battlefield, attack and retreat. Use the terrain to your best advantage. During times of peace, build your economy, keep your peasants happy and your soldiers loyal or risk revolt. Negotiate with other lords, or perhaps you would rather just send Ninja. Seize all the advantages you can. You'll need them!

FEATURES:

- *Fully multi-tasking*
- *Two Scenarios*
- *Not copy protected*
- *Detailed historical notes, manual and poster included*
- *Complete mouse support*
- *Five levels of difficulty*
- *One to Eight players*
- *Easy to use reference card included*



Bandit Kings of Ancient China - The evil minister Gao Qiu has usurped the command from the throne. The righteous followers of the emperor have been exiled as outlaws. Join these heroic rebels in your mission to overthrow a wicked empire, and restore the might to the throne. *Available for NES, PC and Amiga.*



Genghis Khan - Become the greatest warrior the world has known. Through battles and allegiances, forge the mighty Mongol Horde. With armies at your command, the empires of the world are tempting targets. Fight bravely to achieve the ultimate goal of world conquest. *Available for NES, PC and Amiga.*



Romance of the Three Kingdoms - As a Warlord of the 2nd century China, you must restore a shattered Empire. Gather the bravest warriors of the land to build up your armies. Use strength and strategy to destroy your enemies and claim the power to govern all of China. *Available for NES, PC and Amiga.*

KOEI's "HOW WELL DO YOU KNOW OUR HISTORY?" Sweepstakes

Questions:

1) Genghis Khan's greatest claim to fame was?
(a) a quick temper (b) the hit single "I feel for you!" (c) a bad smell (d) carving out an empire stretching from China to Europe in the 12th century

2) What famous gang defeated the evil minister Gao Qiu and restored peace to the Song Empire?
(a) Hole in the Wall Gang (b) Bandit Kings of Ancient China (c) Gang of Four

3) What was the epic describing the power struggle at the end of China's second Han Dynasty called?
(a) Romance of the Three Kingdoms (b) I Ching (c) Godzilla

4) Who terrorized and almost succeeded in unifying Japan in the 16th Century?
(a) Cowabunga (b) Nobunaga Oda (c) Godzilla

5) What type of game does KOEI make?
(a) simulation (b) historical (c) educational (d) entertaining (e) all of the above (f) none of the above

6) "KOEI, We __________ the past, you make the __________ !"
(Fill in the blanks)

Official Rules- NO PURCHASE NECESSARY

How To Enter: On a 3x5 piece of paper, print your name, address, zip , age and the answers to the six questions listed above. Answers to the questions may be found within the ads, on actual game boxes or from someone who is familiar with the game. All entries must be postmarked no later than February 15, 1991. Send entries to: KOEI CORPORATION, 1350 Bayshore Highway, Suite 540 Burlingame, CA 94010

Every month (November 1990-February 1991) 40 winners will be randomly drawn from all entries having the correct answers. These winners will receive a KOEI Game Player's T-shirt (approx. retail value $12). After all entries are received (postmarked no later than February 15) 50 more prizes will be awarded to winners randomly drawn from all entries having the correct answers. These winners will receive a KOEI Game, choice of title (approx. retail value $65). One grand prize winner will be chosen and awarded Sony's HandiCam (approx. retail value $1,000). Odds of winning depend on number of vaild entries received. Judges decision is final. Not responsible for lost, late or misdirected, incomplete or illegible entries. Winners will be notified by mail. Total approximate retail value of all prizes $5,000. Sweepstakes open to U.S. residents except employees and families of KOEI Corporation, Ltd. All prizes will be awarded. Limit one prize per household/family. No substitutions or cash equivalents. Taxes, if any, are the responsibility of winners. Sweepstakes void where prohibited, taxed or restricted. Winners agree to the use of their names and likenesses for publicity and advertising purposes without additional compensation or permission. (For winners list, send a SASE to same address. Available after March 1, 1991.)

KOEI Games are available in retail outlets nationwide! Your local retailer is the quickest and most convenient way to find the KOEI products you want. If you can't find the KOEI product you are looking for, call us at (415) 348-0500 (9am to 5pm PST) to charge on Visa/MC. Continental U.S. shipping only.

KOEI

We Supply The Past, You Make The History

KOEI CORPORATION One Bay Plaza, Suite 540 1350 Bayshore Hwy. Burlingame, CA 94010 (415) 348-0500

Circle 105 on Reader Service card.

run AS220 only with Commodore boards.

Despite what may be perceived as a broad array of networking products (see the "Amiga Networking Products" buyer's guide on p. 52), Amiga developers have addressed only a small slice of available networking options. Because of lack of demand, effectively connecting the Amiga to "big iron," such as IBM mainframes, has so far been a neglected area. If and when the Amiga makes major inroads into large corporations, we may see developers tackle the heavy hardware.

STUCK AT DEUCE?

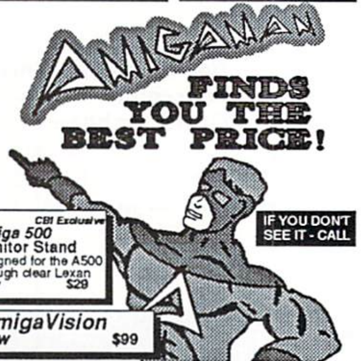
As difficult as building individual networking products may sound, the real problem will be to make Amiga applications work effectively with the networks. Given the confusing multiplicity of networking systems, we're talking about a task of considerable proportions.

Commodore, however, plans to ease that burden. In an "unannounced research project," the firm is writing a so-called network adapter independence layer into the Amiga's operating system. According to Commodore, when this project is completed, all conforming network software will work with any supported network transmission medium. As Commodore's VP of Applications and Technical Support Jeff Scherb explains, this would allow a properly written version of DECnet to work with Ethernet, Arcnet, and other hardware adapters of the future. According to Scherb, this would, for example, let you base your hardware scheme and protocol choices upon price/performance rather than compatibility.

As is stands, the number of Amiga applications currently taking advantage of networks is negligible. Seeing the light early on, however, Precision Software has included Novell network support in Superbase 4, the latest version of its popular relational database. Amigas running Superbase 4 will be able to communicate with PCs running Superbase, provided both users share a common Novell server.

Fortunately, many Amiga networking software systems provide some of the same services (file transfer, E-mail, and so forth) as the major networks. In many cases, these services can be supplied while other tasks are running—although, typically, they are not fully integrated with the Amiga applications. Yet, as networks proliferate—and when Commodore releases its multinetwork programming interface—more Amiga vendors may build networking capability into their packages, thus allowing users to share files and send and receive messages from within applications.

Given present conditions, it may be some time before you and your Amiga start networking with the big boys. But the players at Commodore and other Amiga development firms aren't afraid to stand at the net and volley with the heavy hitters. Stay tuned for a lot more activity on the Amiga networking front. ■



A NEW WORLD OF POWER



THE TOTAL DISK BACKUP SOLUTION!!

COMPLETE HARDWARE/SOFTWARE SYSTEM FOR ONLY

$69.99

... "It's fast, easy to use and very, very efficient."
AMIGA FORMAT

THE SYNCRO EXPRESS II

NOW YOU CAN BACK-UP ANY DISK IN AROUND 50 SECONDS!!

- YES IT'S TRUE!! SYNCRO EXPRESS IS A HARDWARE/SOFTWARE SYSTEM THAT WORKS WITH "DIGITAL IMAGE COPYING". THIS IS THE METHOD THAT COMMERCIAL DUPLICATORS ACTUALLY USE TO MAKE THE ORIGINAL FROM THE MASTER DISK. DATA IS TRANSFERRED AS RAW DIGITAL INFORMATION.
- UNMATCHED PERFORMANCE!! It's hard to draw comparisons between Syncro Express and old fashioned Disk Copiers. Because they use parameters, they are almost guaranteed NOT to copy your latest purchase since parameters are not made available until several months after the release. But with the Syncro Express image copy method you can get a backup of all the latest programs, including blockbusters and utilities, quickly & easily. Start protecting your software investment NOW!!
- Menu Drive Control Program couldn't be simpler!! Select Number of Tracks, and that's it!! Don't be mislead by outrageous claims for "Nibbler" programs. This system can guarantee success by using the very Hardware/Software techniques that made the original!!

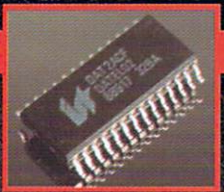
Why will Syncro Express succeed where others fail?

- Some programs now have very sophisticated protection including long tracks, Incryption, etc. But remember, whatever the programmer comes up with, the disk then has to be commercially duplicated. That's where Syncro Express beats all others - it transfers data at MFM/TTL level, just like the duplicators.

POWER BY DESIGN

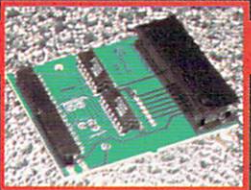
- Syncro Express is designed in Europe where "Digital Image Copying" is the present sensation. This device, with it's custom chip, goes even further by offering a complete system for under $70!!
- Manufactured in our European facility using the latest Surface Mount Techniques - Syncro Express is warranted for 6 months against manufacturing defects.

THE LATEST CUSTOM LSI CHIP TECHNOLOGY



Syncro Express comes fitted with it's own on-board Custom LSI Chip giving it the power to transfer an MFM image of the original disk directly to your blank disk - quickly, simply & without user knowledge. So it doesn't matter what kind of data is there or whether the disk is "protected" - Syncro Express will make an identical "Clone" of your original without fuss. Available for A500/1000/2000/3000 please state which computer when ordering. One external drive is required (except Special A2000 Internal Version - see below).

SPECIAL A2000 VERSION NOW AVAILABLE!



A special version of Syncro Express hardware for the A2000 Amiga with two internal disk drives is available. Fits internally so you don't need the external drive that the Standard version requires. Very easy to fit.

SPECIAL A2000 INTERNAL VERSION ONLY $89.00

HOW TO GET YOUR SYNCRO EXPRESS II

CALL TOLL FREE - 1 - 800 - 962 - 0494 - ORDERS ONLY

WE WILL PROCESS YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECEIVING THE BENEFITS OF YOUR SYNCRO EXPRESS II WITHIN DAYS, NOT WEEKS.
OUR MULTI-USER XENIX BASED ORDER PROCESSING SYSTEM CONTROLS YOUR ORDER FROM THE MOMENT YOU PLACE IT RIGHT THROUGH TO DESPATCH. ORDERS NORMALLY DESPATCHED WITHIN 48Hrs.

COAST TO COAST TECHNOLOGIES INC.,
1855 S. R.434, SUITE #208, LONGWOOD, FLORIDA 32750. TECHNICAL/CUSTOMER SERVICE (407) 767 - 0779

*ADD $4.00 SHIPPING AND HANDLING
($10.00 CANADA/MEXICO)
ALL GOODS SHIPPED 2nd DAY AIR UPS

UPS 2ND DAY AIR

WE ACCEPT MASTERCARD
VISA/CHECKS/MONEY ORDERS
or COD's (ADD $2)

Circle 83 on Reader Service card.

COAST TO COAST TECHNOLOGIES







HAND HELD 400 DPI PAGE SCANNING SYSTEM

- An easy to handle Handy Scanner featuring 4" scanning width and 400 dpi resolution enables you to reproduce graphics and text on your computer screen.
- A powerful partner for Desk Top Publishing.
- Package includes GS4500 scanner, interface and ScanEdit software.
- With Geniscan you have the ability to easily scan images, text and graphics into the AMIGA.
- Save images in suitable format for leading packages including D. PAINT, PHOTON PAINT, etc., etc.
- Unmatched range of edit/capture facilities not offered by other scanners at this unbeatable price.
- Adjustable switches for brightness and contrast.
- Powerful software allows for Cut and Paste Editing of images etc.

ONLY $269.00*





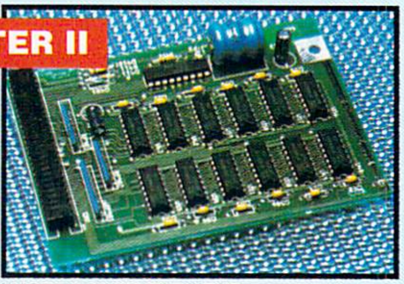
AMIGA PRO STEREO SAMPLER STUDIO II + DATEL JAMMER

- A top quality stereo sampling system at a realistic price.
- The NEW Sampler II software now incorporates faster routines, bigger displays and many new editing features such as Cut, Copy, Insert, Mix, Erase, etc. with stereo lock control for ease of use.
- Separate zoom windows/controls for left and right channels.
- Adjustable trig record level and sound monitor.
- Separate buffer for editing waveforms and improved wave-editor with instant update and Multi-bank facilities for 1 Meg users.
- Save files in Raw or single, multi-octave IFF format.
- Envelope control panel for ramping up and down re-scale amplitude, noise filter and scan waveform.
- On screen display of filenames sample rate, length, etc.
- Inputs for microphone or line 1/4" jack and DIN connections

ONLY $129.00*

RAM-MASTER II

NOW A FULL 2 MEGS FOR YOUR A500



- IF YOU NEED EVEN MORE POWER THEN THE RAM-MASTER II™ IS FOR YOU!!
- Adds an extra 1.5 Megs to your A500 (giving a total free memory of 2 Megs). • Uses the latest 1 Meg DRams resulting in extra low power consumption. • Works with Kickstart 1.3 onwards. • High grade PCB. • Complete with onboard clock/calendar. • Easily fitted in the slot under your A500 - requires no soldering (your computer must be opened to plug in the GARY chip adaptor) • Easily dissabled in software.

ONLY $229.00* COMPLETE WITH RAM
OR IF YOU HAVE YOUR OWN 414256 CHIPS WE CAN SUPPLY THE BARE BOARD
FOR ONLY **$79.00*** FOR BARE BOARD WITHOUT RAM *

MICRO MIDI



FULL SPECIFICATION MIDI INTERFACE

- Fully compatible MIDI Interface for the A500/1000/2000 (please state model required).
- MIDI In - MIDI Out - MIDI Thru.
- Fully Opto isolated.

ONLY $39.99*

BOOTBLOCKER

NOW YOU CAN END YOUR VIRUS PROBLEMS!



- Plugs into Amiga Disk Drive Port.
- Protects both internal and all external drives from virus damage.
- Switch to enable/disable protection.
- Can be left permanently installed.
- Works with all known Boot Block Viruses.
- Start to protect your software investment now.

ONLY $19.99*

HOW TO GET YOUR ORDER FAST...

CALL TOLL FREE - 1 - 800 - 962 - 0494 - ORDERS ONLY

WE WILL PROCESS YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECEIVING THE BENEFITS OF YOUR PURCHASE WITHIN DAYS, NOT WEEKS.
OUR MULTI-USER XENIX BASED ORDER PROCESSING SYSTEM CONTROLS YOUR ORDER FROM THE MOMENT YOU PLACE IT RIGHT THROUGH TO DESPATCH. ORDERS NORMALLY DESPATCHED WITHIN 48Hrs.

COAST TO COAST TECHNOLOGIES INC.,

1855 S. R.434, SUITE #208, LONGWOOD, FLORIDA 32750. TECHNICAL/CUSTOMER SERVICE (407) 767 - 0938

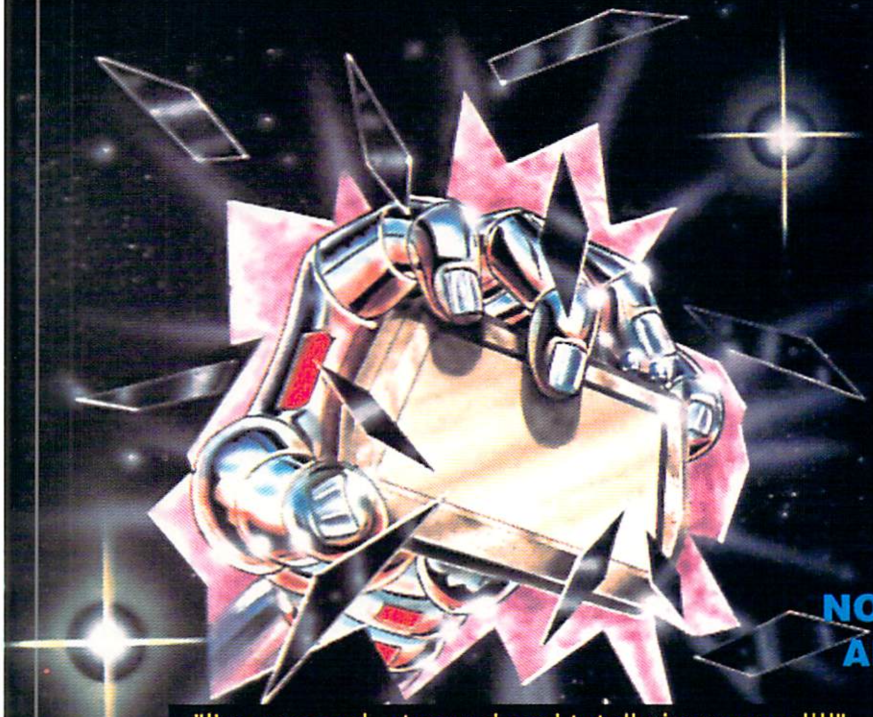
WE ACCEPT MASTERCARD VISA/CHECKS/MONEY ORDERS or COD's (ADD $2)

***ADD $4 SHIPPING AND HANDLING ($10.00 CANADA/MEXICO) WE SHIP ALL GOODS 2nd DAY AIR UPS**

CCT 3

Circle 7 on Reader Service card.

THE POWER BREAKS THROUGH...



AMIGA ACTION REPLAY

ONLY
$99.99
SHIPPING & HANDLING $4.00

NOW YOU CAN FREEZE MOST ANY PROGRAM AND MAKE A BACKUP AT THE PRESS OF A BUTTON!

"I'm amazed, stunned and totally impressed!!!"
AMIGA FORMAT MAGAZINE

YES, AMIGA ACTION REPLAY PLUGS INTO THE EXPANSION PORT OF YOUR A500/A1000 AND WORKS BY TAKING A SNAPSHOT OF THE WHOLE PROGRAM IN MEMORY AND SAVING IT TO DISK. THE BACKUPS WILL LOAD AT UP TO 4 TIMES FASTER THAN AMIGA DOS AND EVEN WORK COMPLETELY INDEPENDENTLY OF THE CARTRIDGE.

BUT THAT'S NOT ALL... AMIGA ACTION REPLAY GOES EVEN FURTHER BY PROVIDING AN UNBELIEVABLE RANGE OF TOOLS FOR BOTH THE HACKER AND PROGRAMMER ALIKE

JUST LOOK AT THIS UNMATCHED RANGE OF FEATURES...

- **UNIQUE INFINITE LIFE/TRAINER MODE**
Allows you to generate more and even infinite lives, fuel, ammo, etc. Perfect as a trainer mode to get you past that "impossible" level. Very easy to use.
- **SPRITE EDITOR**
The full sprite editor allows you to view/modify the whole sprite set including any "attached" sprites.
- **VIRUS DETECTION**
Comprehensive virus detection and removal features to protect your software investment. Works with all presently known viruses.
- **SAVE PICTURES AND MUSIC TO DISK**
Pictures & sound samples are saved to disk. Files are IFF format for use with most major graphic & music packages.
- **SLOW MOTION MODE**
Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!
- **RESTART THE PROGRAM**
Simply press a key and the program will continue where you left off.
- **FULL STATUS REPORTING**
At the press of a key now you can view the machine status. Including Fast Ram, Chip Ram, Ram, Disk Drive status, etc.

- **NOW WITH NEW POWERFUL PICTURE EDITOR**
Over 50 commands for advanced picture manipulation. Even has memory search command to locate pictures throughout RAM. Unmatched range of features!!

PLUS THE MOST POWERFUL MACHINE CODE FREEZER/MONITOR

MORE FEATURES THAN YOU CAN EVER NEED. HERE ARE JUST SOME...

- Full M68000 Assembler/Disassembler
- Full Screen Editor
- Load/Save block
- Write string to memory
- Jump to specific address
- Show RAM as text
- Show frozen picture
- Play resident sample
- Show and edit all CPU registers and flags
- Calculator
- Help Command
- Full search feature
- Unique Custom Chip Editor allows you to see and modify all chip registers - even Write Only registers
- Notepad
- Disk handling - show actual track, Disk Sync pattern, etc.
- Dynamic breakpoint handling
- Show memory as HEX, ASCII, Assembler, Decimal
- Copper assemble/disassemble

REMEMBER AT ALL TIMES YOU ARE INTEROGATING THE PROGRAM IN IT'S FROZEN STATE WITH ALL MEMORY AND REGISTERS INTACT - INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUISATIVE!

HOW TO GET YOUR AMIGA ACTION REPLAY...

CALL TOLL FREE - 1 - 800 - 962 - 0494 - ORDERS ONLY

WE WILL PROCESS YOUR ORDER QUICKLY & EFFICIENTLY TO ENABLE YOU TO START RECEIVING THE BENEFITS OF YOUR AMIGA ACTION REPLAY WITHIN DAYS, NOT WEEKS.
OUR MULTI-USER XENIX BASED ORDER PROCESSING SYSTEM CONTROLS YOUR ORDER FROM THE MOMENT YOU PLACE IT RIGHT THROUGH TO DESPATCH. ORDERS NORMALLY DESPATCHED WITHIN 48Hrs.

COAST TO COAST TECHNOLOGIES INC.,
1855 W S.R.434, SUITE #208, LONGWOOD, FLORIDA 32750.TECHNICAL/CUSTOMER SERVICE (407) 767 - 0938

WE ACCEPT MASTERCARD VISA/CHECKS/MONEY ORDERS or COD's (ADD $2)

***ADD $4.00 SHIPPING AND HANDLING ($10.00 CANADA/MEXICO) WE SHIP ALL GOODS 2nd DAY AIR UPS**

Circle 114 on Reader Service card.

First Steps in Assembly Language

By Jim Butterfield

IF YOU HAVE experience with assembly language on other machines, making the transition to Amiga assembly should not be a problem. Just follow these steps and you will easily adapt.

Keep your first programs simple. They should be CLI driven, for you need lots of extra code for an icon start from the Workbench. They should also focus on DOS calls and involve only a few system calls. The dos.library calls do "traditional" data-processing jobs: reading the keyboard or files, outputting to a screen, file, or printer, and so on. DOS-oriented coding lets you produce useful programs quickly.

Leave the more complex system calls (to the Graphics and Layers libraries for screens, windows, gadgets, and menus) until you gain some Amiga programming experience. By the same token, do not overload on reading documentation. There's too much information to digest at once; concentrate on what you need immediately. Go easy on advanced assembler tools, such as macros and includes, as well. They will be useful later, but at first they might mask the nature of what your code is doing.

Gather Your Tools

If you cannot afford a commercial assembler, linker, and debugger, check your user's group or bulletin board for the public-domain programs A68K (by Charlie Gibbs), BLink (by John Toebes), and Debug (by Jim Thibodeau and Larry LaPlume). Free assemblers do have one drawback. Unlike commercial packages, they do not include the useful sets of supplementary files called includes and libs, because the files are copyrighted by Commodore.

You can, however, get along without these files. Their most important information is offset values, which tell a program how to find a position within a data structure and the specific jump-table offset to use in calling a library function. You can find these values in several books; a good choice is *Amiga ROM Kernal Manual, Includes and Autodocs* ($57.90, Addison-Wesley, Route 128, Reading, MA 01867, 617/944-3700).

For further research, you'll find no better reference for the microprocessor chips than the manufacturer: *The Motorola MC68000 Programmer's Manual*, catalog #M68000PM/AD ($3.70, LDC, PO Box 20924, Phoenix, AZ 85036, 800/521-6274). For AmigaDOS calls, the official reference is *The AmigaDOS Manual* ($24.95, Bantam Computer Books, 666 Fifth Ave., New York, NY 10103, 212/765-6500).

A Simple Sample

Let's try a simple program that prints a message (Hello, world!) and runs from the CLI only. We'll plan the program from the inside out, first discussing the command that does the job, then adding the extra code to perform the setups the Amiga requires. To send the message, you use the DOS call, Write( ), which sends ASCII characters to an output stream. The register setup is:

A6—DOSBase, the address of dos.library (jump table)
D1—output handle, a value defining our output path
D2—data address, a pointer to the message "Hello, world!"
D3—data length, size of the message "Hello, world!"

Invoke Write( ) with a subroutine call (JSR) to address DOSBase minus hexadecimal 30. (Note that the jump table is below the DOSBase reference pointer.) This command returns a value in register D0 that could be used for error checking, but we won't worry about that right now.

You know how to set up the D2 data address; that will be the message "Hello, world!" that you will define near the end of the program. You also can define the D3 length, of course, by counting the message's characters or having the assembler do so. ►

Prepare for the ultimate fantasy when the first official Advanced Dungeons & Dragons® Game Product comes alive on your computer!



SSI proudly presents *Pool of Radiance*, the culmination of its collaboration with TSR to bring the legendary ADVANCED DUNGEONS & DRAGONS® fantasy role-playing system to your home computer.

Pool of Radiance is set in the huge, complex world of the Forgotten Realms. Its game system adheres faithfully to AD&D® standards. Its state-of-art graphics push the very limits of the computer's capabilities.

The only way to believe it is to experience it for yourself — wherever game software is sold.

To order, visit your retailer or call 1-800-245-4525 to charge on VISA/MC. To receive SSI's complete product catalog, send $1.00 to: SSI, 675 Almanor Avenue, Suite 201, Sunnyvale, CA 94086.





SSI™

STRATEGIC SIMULATIONS, INC.

The remaining questions are how to get the A6 pointer to DOSBase and the D1 output handle.

GETTING A HANDLE

The output handle is easy. Because you are starting from CLI, the DOS call, Output( ), will give you the "current output stream" handle. In this case, it is the CLI window, because you are not using redirection. The register setup is:

A6—DOSBase, the address of dos.library (jump table)

To return the file-handle value in D0, invoke Output with a subroutine call (JSR) to address DOSBase minus hexadecimal 3C.

Your working program now has two steps: call Output( ) to get the handle, then call Write( ) to send the message. Before doing so, however, you need to find the address DOSBase.

The first step is to find the "jump table" (Library Base, in Amiga terms) that gives you access to the DOS calls. This is not always located at the same address in memory, so you have to look for it. In fact, some libraries won't be in memory at all when you first search; they will be loaded from disk at that time. Whether you're looking for the library base or loading it, use the Exec call, OpenLibrary( ), which searches for a library base according to a name you supply. The register setup is:

A6—ExecBase, address of the Exec Library (jump table)
A1—a pointer to the library name in ASCII
D0—zero or a library version number

To return the library address in register D0, invoke OpenLibrary( ) with a subroutine call (JSR) to address ExecBase minus hexadecimal 228. If the command returns zero, you did not find the address.

The library name, like the "Hello, world!" message, will be written into your program. Be sure to take three precautions: Follow the name string by a binary zero character; spell the library name with upper- and lowercase letters exactly as specified; and, when you're finished, remember to close all libraries you opened. An Exec call, CloseLibrary( ), makes a note that you do not need a library any more. (When all programs accessing it close a library, the system removes it from memory.) The register setup is:

A6—ExecBase, address of the Exec Library (jump table)
A1—a pointer to the library base

You invoke CloseLibrary( ) with a subroutine call (JSR) to address ExecBase minus hexadecimal 19E.

Let's review the program flow again. First, call OpenLibrary( ) to get the DOS library base; then print, using Output( ) and Write( ). Next, free the DOS library with CloseLibrary( ). That doesn't sound too hard, but you may seem to be running into a paradox. You need to get ExecBase (often called SysBase), the pointer to the Exec library. Are you starting to go around in circles? Nope.

The base of the Exec library might be any of several places, but you have an easy way of finding it: Its address is always stored in the longword at location 4 (that's four bytes, ranging from 4 to 7). No more calls are needed; just grab the address and start using it.

One more piece of useful data: All system calls are likely to change registers D0, D1, A0 and A1; the values in the other registers (D2 to D7 and A2 to A7) will be preserved. If you're smart, you'll make your own subroutines work that way, too.

THEORY IN ACTION

I won't explain the instructions or addressing modes here; check them with any reference document. You can enter the following code from an editor program, and then assemble and link it to produce a simple, working program. It's complete in itself; no includes, linked libraries, or macro files are needed.

```
; Optional for some assemblers
  section code
; Open and set up the DOS library
  MOVE.L  4,A6            ; set up ExecBase in A6
  LEA     DosName(pc),A1; address of Dos name into A1
  MOVEQ   #0,D0           ; any version
  JSR     -$228(A6)       ; call OpenLibrary("dos.
                            library",0)
  TST.L   D0              ; did we get the dos library?
  BEQ.S   Exit            ; nope, give up
; Find the output handle.
  MOVE.L  D0,A6           ; set up DosBase into A6
  JSR     -$3C(A6)        ; Output( )
  MOVE.L  D0,D1           ; setup output handle
; Send the message.
  LEA     Msg(pc),A0      ; address of Hello, world!
  MOVE.L  A0,D2           ; . .into D2
  MOVEQ   #14,D3          ; size of Hello, world!
  JSR     -$30(A6)        : Write(handle,"Hello, world!",14)
; Close the DOS library
  MOVE.L  A6,A1           ; DosBase pointer
  MOVE.L  4,A6            ; using Exec library
  JSR     -$19E(A6)       ; CloseLibrary(DosBase)
  MOVEQ   #0,D0           ; signal 'no error'
Exit RTS
DosName   DC.B  'dos.library',0
Msg       DC.B  'Hello, world!',$a
  END
```

All you have to do is assemble, link, and run it, and you're on your way! ■

Jim Butterfield is a grizzled veteran of the microcomputer wars who has been writing about Commodore machines from the Kim1 to the Amiga. He is also the author of Machine Language for the Commodore 64, 128, and other Commodore Computers. *Write to him at 14 Brooklyn Ave., Toronto, Ont., Canada M4M 2X5.*

IT'S VIDEO

IT'S AUDIO

IT'S COMPUTERS

Searching for a camcorder that will help you make terrific videos? ... Shopping for a quality CD player that won't bust your budget? ... Trying to create great graphics with your computer? ... Looking to upgrade your VCR system? ... It's all here in *ON!*

ON! explores emerging trends and exciting breakthroughs. You'll find out what's hot and what's not--the products you'll enjoy for years and those that are merely passing fads.

With each monthly issue you'll become a more savvy consumer. *ON!* gives you advice from the experts without confusing technical jargon.

And then, *ON!* helps you get the very best buys for your money.

But that's just the beginning. *ON!* is filled with important tips and helpful hints on how to get the most out of *all the home electronics equipment you already own.*

In *ON!* you'll discover...

- how ingenious camera techniques used by the pros can help you produce professional-quality videos.
- how easy it is to create a sound system that will satisfy even the most discerning music lovers and not take over your living room.
- how to take full advantage of your home computer – from preparing outstanding presentations to helping the kids with their homework.
- how to "build" a home theater and still have money left over for popcorn.
- and more!

Turn to *ON!* It's an experience you won't want to miss!

Order your FREE Premiere Issue of ON! today! Just call 1-800-343-0728 or fill in the coupon at right. This FREE offer is available for a limited time only.

The Premiere Issue of *ON!* will also go on sale at your newsstand November 13, 1990.



IT'S ON!

Order Your FREE Issue Today!

IT'S HOT

ON! is NEW. It's dynamic! ON! is the one magazine that puts you on the inside track of the fast-changing world of video, audio and home computers.

✓ **YES!** Send me my FREE Premiere Issue of ON! and reserve my Charter Subscriber privileges. If I like ON! my price for a full year (11 more issues for a total of 12) is just $12.97. That's a savings of 63% off the single copy price. If I choose not to subscribe, I'll write "cancel" on the bill you send, owe absolutely nothing, and keep the Premiere Issue with your compliments.

SEND NO MONEY NOW. WE WILL BILL YOU!

Name ____________________

Address ____________________

City ______________ State _____ Zip _______

AWN90

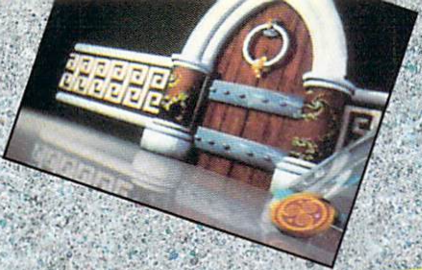
WIN A $5000 HOME THEATER!

For complete details on how you can win, order your FREE issue today.

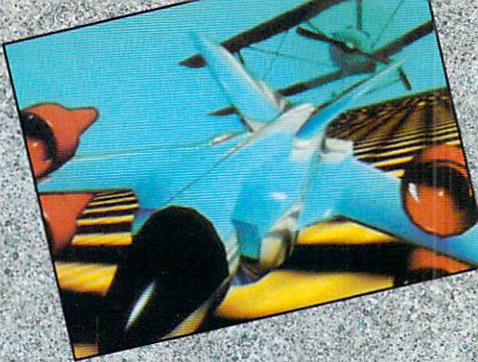
YOUR SATISFACTION IS 100% GUARANTEED!

I understand that if I am not completely satisfied, I may cancel at any time and receive a full refund.

ON! P.O. Box 802, 80 Elm Street, Peterborough, N.H. 03458 • 1-603-924-9471 • 1-800-343-0728



All photographs are of actual DCTV screens.





The Future Is Here



- ▲ Paint, digitize and display full color NTSC video graphics on any Amiga.® *
- ▲ Capture a video frame in 10 seconds from any color video camera. (Also works with still video cameras, video disk and still frame capable VCR's.)
- ▲ Display and capture full color 24 bit high resolution images.
- ▲ Convert DCTV™ images to or from any IFF display format (including HAM and 24 bit).
- ▲ Paint, digitize and conversion software are all included.
- ▲ Works with all popular 3D programs.
- ▲ Animate in full NTSC color.





$495

** Min. 1 Meg. required*

DCTV™ (Digital Composite Television) is a revolutionary new video display and digitizing system for the Amiga. Using the Amiga's chip memory as its frame buffer memory, DCTV™ creates a full color NTSC display with all the color and resolution of television. Sophisticated true color video paint, digitizing and image processing software are all combined into one easy to use package included with DCTV.™ DCTV™ also works with all popular 3D programs to create full color animations that can be played back in real time.

DIGITAL CREATIONS

2865 Sunrise Boulevard Suite 103 Rancho Cordova CA 95742 Telephone 916/344-4825 FAX 916/635-0475

Circle 28 on Reader Service card.



Compositing Conjury

#21

A continuing series of tips, techniques, and tricks for creating more imaginative Amiga graphics.

By Joel Hagen

IN WOODY ALLEN'S movie "Zelig," clever compositing techniques placed Allen's character convincingly into scenes with Adolph Hitler, Babe Ruth, and other real, historical figures on newsreel footage. Through software such as DeluxePaint III (Electronic Arts), Digi-Paint 3 (NewTek), Deluxe PhotoLab (Electronic Arts), and Photon Paint 2 (Micro-Illusions), the Amiga can put similar capabilities in your hands. For this introduction to photo-compositing techniques, we will use DeluxePaint and the Amiga's 16-level gray scale. A future column will explore HAM methods for achieving the same objective.

"Lincoln, Lincoln, I've Been Thinkin'. . ."

Compositing a photo of a person into another scene is a fun first project. You could join the crew on the bridge of the Enterprise, have your little brother body-slam Hulk Hogan, or put your mother-in-law on the surface of Mars. For the illustration accompanying this column, I started with a Matthew Brady portrait of Abe Lincoln, then searched for a suitable image to add to it. I chose a photo of the Mimbreno warrior, Mangus, that matched the Lincoln lighting fairly closely. Sometimes (as I did in this case) you can even flip an image in the computer to match shadow directions.

I used Digi-View (NewTek) to capture both images—adjusting brightness, contrast, and sharpness, so that both pictures matched as closely as possible before saving. I had to adjust the distance from photo to camera differently for the two images to get the heads about the same size. Marking the measurements of Abe's head on a piece of paper held to the screen, I was then able to use them as a reference for focusing the camera on the Mangus photo. You will find that attention to detail in selecting images, sizing them, and balancing the image-processing settings in the digitizer will make compositing much easier and more effective.

Loading the image of Abe into DPaint, I worked in a 32-color palette for convenience. In order to use the Shade and Blend modes, I remapped the shuffled Digi-View gray scale to a sequential gray scale. Referring to the palette positions as 0 through 31, I made color 16 black, color 31 white, and color 0 near-black, with the blue slider raised one notch. I "Spread" color 16 to color 31 to get the required sequential gray scale and set it as the only Range. For menu readability, I made color 1 brown and then made all other colors nongray. It is critical that all colors be nongray except the last 16.

If you have done everything correctly, the picture will be unrecognizable colored confetti. Now, however, go to the Picture menu, select submenu Change Color, and choose Remap. The computer remembers the original grays in the picture and searches your new palette for the equivalents you have provided. After several seconds, the image should pop back to its original appearance, remapped to the last 16 colors. If it fails to do so, reload the original image, select Restore Palette from the Change Color submenu to bring back your sequential palette, and then Remap again.

"My Captain. . .Your Cap 'T Ain't Right!"

Saving the remapped image, I then loaded Mangus to the spare screen. Using Restore Palette and Remap, I matched it to Abe's palette. With brushes from the tool bar, I carefully "erased" the background color around Mangus with a nongray color, which allowed me to pick him up as a brush from the background. Flip-

There are big kicks to be had from small tricks—as these compositing techniques will clearly demonstrate.

ping to Abe on the spare screen, I positioned him to see if the composite had potential. I quickly saw he was too light, a little too large, and outlined with a lot of dark pixels from the background of his original image.

Back on his screen, I cleared the screen, stamped him down on the left as a safety image in case I made mistakes, and pressed SHIFT-O. This removed a single-pixel outline from the Mangus brush, getting rid of most of the "mat line" of dark pixels. I stamped this new brush down to work on and then pressed the F5 key for the Shade mode. Positioning the brush precisely over the screen image, I clicked the appropriate mouse button once to darken him one level. Picking him up, I checked him against Abe and found the match good. I hit the "—" key once to reduce his size, returned him to his own screen, and saved him.

I wanted to place Mangus behind Abe, the top hat, and the table. To do so, I made a two-color version of Abe's picture as a mask. Using the "," key to sample the values of the background, I noted that I would get a clean silhouette by making the first seven dark grays one color. In the Stencil tool, I selected the last nine grays and then Make Stencil. Selecting blue from my palette as a background color, I cleared the screen to make the seven dark grays all blue—giving me a clean silhouette of all foreground objects in the photo. I cleared the stencil, selected that blue and then Make Stencil. This foreground area was now established as a mask. I toggled Stencil off and reloaded the image of Abe. Bringing my Mangus brush into that image, I toggled Stencil on and he popped neatly into the background.

Cleanup, the final stage of compositing, will make or break the image. I began with a single-pixel brush and Magnify. Using the n key, I moved around the edge of the Mangus cutout—striving to eliminate hard edges by changing Edge values to ones closer to the background. The "," key allowed me to pick appropriate colors from the magnified screen for pixel-by-pixel changes. I frequently used a single pixel in the Shade mode to easily darken or lighten a row of pixels. Turning off magnification, I used Blend mode to nudge edges where needed and to feather the hair and headgear into the background. With a small brush, I used the Smooth tool sparingly to blur a few spots that were still too sharp. I cut out Mangus's cap, flipped it, and put it on Abe—modifying it with Blend and Shade. That was about it.



It is doubtful that the famed Civil War photographer Matthew Brady himself could explain why President Lincoln (above) is trading hats (reluctantly) with a visiting Arizona tourist.

So we have history rewritten on the Amiga. Our little project was purely for fun, but we are also seeing increasing computer alteration of journalistic images without realizing we are being handed a modified reality. This is risky magic in a free society, and the legal and ethical bounds of such techniques are coming under closer scrutiny. Therefore, *caveat compositor*:

"So now this craft I to you confer;
Do not the wrath of the gods incur." ■

Joel Hagen's credits include work in art, astronomy, science fiction, and software development. Write to him at 10512 Sawyer, Oakdale, CA 95361. Please include a stamped, self-addressed envelope for a reply.

Mastering

Multi Media

Picking the Right Program

By Geoffrey Williams

Editor's Note: Welcome to our new monthly column on multimedia. It will feature a variety of experts bringing you tips, techniques, or tutorials on different aspects of Amiga multimedia productions.

YOU HAVE THE perfect interactive presentation mapped out in your mind. All you need now is multimedia software to build it. Find the functions you plan to use in the list below and see which programs handle them most skillfully.

Hot-Key Random Access to Stills and Animations: If you need simple page flipping only, I suggest Elan Performer 2.0 (Elan Designs, $59). It lets you easily assign animations and stills to every key on the keyboard. By putting the program in Record mode you can display pictures and animations using the hot keys, and then later play back the entire sequence with the same timing. AmigaVision (Commodore, $149), The Director (Right Answers Group, $69.95), Viva (MichTron, $199.95), and CanDo (INOVAtronics, $149.95) also allow you to assign an unlimited number of keys to specific actions in the presentation. Interactor (Very Vivid, $79) and TV*Show (Zuma Group, $99.95) limit you to function keys, while DeluxeVideo III (Electronic Arts, $149.95) limits you to eight assignable keys.

Text Handling: The Director and CanDo lead the pack with powerful text capabilities that let them interpret typed input, scanning for a specified set of characters. Although AmigaVision cannot do sophisticated text interpretation, it will accept keyboard entries during a presentation and is able to integrate them with database functions.

Mouse Button Control: If you want the mouse buttons to behave like a slide projector's remote control, TV*Show is the best choice. The left mouse button moves the presentation forward; the right button shows the previous image. If you are used to slide presentations, you'll have no trouble adapting. While AmigaVision makes mouse control easy, it ignores the right button and, as a result, lacks TV*Show's very useful forward and reverse capabilities.

Hot Spots: A hot spot is a graphic element on the screen that, when clicked on, triggers an event. Interactor lets you create animated buttons that can move around the screen. CanDo lets you create buttons that will trigger different scripts depending upon whether they are double-clicked, single-clicked, clicked and dragged, or clicked and released. AmigaVision lets you create buttons with its object editor or import brushes to use as buttons. TV*Show and Elan Performer do not use hot spots, and Viva and UltraCard (Intuitive Technologies, $50) can handle only rectangular buttons, not the free-form ones available in the other programs.

Playing Back Different Formats: Elan Performer is the only interactive software I know of that supports multiple animation formats. You can play ANIM, Movie, and RIFF animations, as well as show RGB8, RGBN, and Commodore's RGB 24 picture formats, which it converts and displays as HAM.

Transitions: Fancy wipes and reveals between pictures add visual interest. DeluxeVideo III is the leader, offering 13 wipe effects (each with four adjustable patterns) and 16 variable-speed slide effects. TV*Show has 40 variable-speed transitions, and AmigaVision has 18, with a choice of three set speeds. The other programs' transitions are either limited or nonexistent.

Linking Animations: One way to create longer and more interactive animations is to sequence several short ones together. This also allows you to change color palettes in between. Few programs, however, splice segments seamlessly. Viva puts a grey screen between them. TV*Show pauses for almost five seconds. AmigaVision introduces a pause of about one second, while DeluxeVideo III hesitates briefly but still perceptibly between animations. Only The Director and Elan Performer link animations together without interruption.

Memory-Efficient Animation: While the ANIM compression format is efficient for cel animation, long sequences still consume large chunks of memory and disk space. Storing bits and pieces of an animated sequence in memory and moving them as needed is a more compact method. The simplest approach is to have the program move a brush around the screen, as in TV*Show. For real power, however, The Director and DeluxeVideo III are the leaders.

DVideo lets you move brushes and ANIMbrushes across the screen along straight, curved, or erratic paths. You can even move an ANIMbrush while scrolling ►

behind it a SuperBitMap (a picture wider than the screen). As an ANIM, this would take up a lot of memory. With DVideo, all you have in memory is the background screen and the ANIMbrush; the program then manipulates these two elements as you wish. You can also specify different movements based on the way the viewer interacts with your presentation. Instead of having a separate ANIM for each response, you have a variety of scripts that describe the movement of the on-screen objects.

The Director is even more efficient: You load a screen of graphics into memory and display or animate sections of that screen. While The Director is designed for users who want the most from their presentation software, it is entirely script-based and therefore the hardest to use.

Interactive Animation: Being able to change the flow of an animation by interacting with it is one of the most powerful capabilities of interactive multimedia. CanDo, DVideo, The Director, and AmigaVision all do a good job of creating interactive animation, but none comes close to the power of Interactor. That program lets you specify animated brushes as buttons for the viewer to click, even while those brushes are in motion. All animated objects, including buttons, can be affected by such variables as gravity, friction, and acceleration, and they can even detect collisions with other on-screen objects. If you wish, a mouse click or a collision will resequence the animation in the animated brush.

Sound: DeluxeVideo III gives you the most control over digitized sounds, letting you alter pitch, volume, channel, stereo separation, and the ability to pan a sound from one speaker to the other. AmigaVision and CanDo let you set the volume and channel only, while The Director and TV*Show let you set the volume and pitch. Interactor controls only pitch. All allow you to specify the number of times the sound repeats.

An often vital function is to synchronize a sound effect to a particular animation frame. TV*Show makes this very easy by triggering a sound effect on a specific frame of the animation. The Director is also frame specific. With DeluxeVideo III, you can watch the timeline and get an approximate synchronization. While CanDo plays ANIMbrushes only, it will play a sound on a specific ANIMbrush frame. Interactor uses its own brush-animation format for animation, but it does provide frame-accurate sound synchronization.

Music and MIDI: Both DVideo and AmigaVision can play SMUS music files, even through a MIDI instrument. While better MIDI support is planned for the next AmigaVision upgrade, DVideo currently has the best MIDI and music support, with control over tempo and volume. AmigaVision gives you control over volume only and is limited to four MIDI channels.

Scoring: Being able to keep score is especially important for educational applications. CanDo, Interactor, AmigaVision, Viva, and The Director all fit the bill with scoring and math capabilities.

Laser-Disc Control: Only AmigaVision and Viva offer easy-to-use interfaces for laser-disc control. Both let you pop up a control panel with which you can search for the sequences. Programming a laser-video sequence for automatic play is a snap with both of these programs.

ARexx: ARexx is a language that lets multitasking programs communicate with and control each other. Deluxe-Video III can send ARexx messages, but cannot receive them. AmigaVision, CanDo, and Elan Performer have two-way ARexx ports, which means that they can control other programs as well as receive instructions from them. ARexx support is also promised for the next upgrade of The Director. (This column will delve deeper into scripting techniques next month.)

Most multimedia producers rely on more than one program. With all that is available, you are only limited by your imagination, talent and budget. ■

Geoffrey Williams is Executive Producer for Creative Business Communication and head of the Amiga Video-Graphics Guild. Write to him c/o AmigaWorld *Editorial Dept., 80 Elm St., Peterborough, NH 03458.*

Manufacturers' Addresses

Commodore Business Machines
1200 Wilson Blvd.
West Chester, PA 19380
215/431-9100

Elan Design
PO Box 31725
San Francisco, CA 94131
415/359-7212

Electronic Arts
1820 Gateway Dr.
San Mateo, CA 94404
415/571-7171

INOVAtronics
8499 Greenville Ave., Suite 209B
Dallas, TX 75231
214/340-4991

Intuitive Technologies
distributed by mediaMAXX
1199 Forest Ave., Suite 264
Pacific Grove, CA 93950
800/456-6299

MichTron
3285 Lapeer Rd. West
Auburn Hills, MI 48057
313/377-8898

Right Answers Group
Box 3699
Torrance, CA 90510
213/325-1311

Very Vivid
1499 Queen St. West
Toronto, Ont.
Canada M6R 1A3
416/246-5081

Zuma Group
6733 N. Black Canyon
Phoenix, AZ 85015
602/246-6708

NEW: EVEN LOWER PRICES

TURN THE PAGE TO SEE THE BEST PRICES FOR YOUR CREATIVE COMPUTER

Creative™ COMPUTERS

ANNOUNCING
THE CREATIVE COMPUTERS LOW PRICE GUARANTEE

Creative Computers, the service and low-price leader, has just reduced all of its prices even more. Check out the prices in this ad, then compare them to the competition's. If you find a lower price anywhere, we'll beat it!**

The Largest International Dealer of Amiga Products in the World!



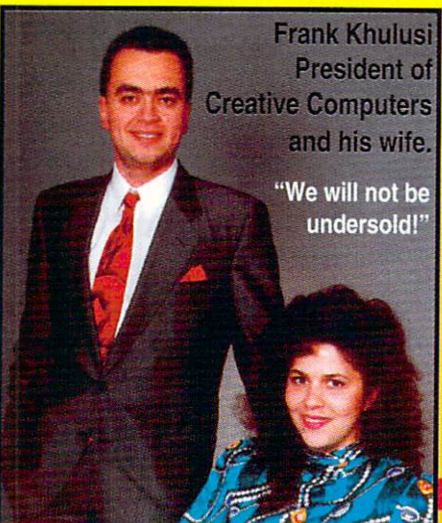
Now with even *LARGER* facilities and a *LARGER* stock

- The Best Service
- The Lowest Prices
- The Largest Selection

(One of the halls in the warehouse)

THE CREATIVE COMPUTERS VIP CLUB
(Membership not required to order)

- 5% off on all software (discounted from our already super-low prices).
- Incredible **SAVING** on many hardware items.
- A **FREE** subscription to our newsletter "The Creative Edge."
- A **FREE** Creative Computers Amiga T-Shirt.
- **PRIORITY** notification on all SPECIAL DEALS and BLOW-OUT ITEMS.



Frank Khulusi President of Creative Computers and his wife.

"We will not be undersold!"

If you order from Creative Computers before November 30th, 1990, any order totalling $600 or more, you will receive a free 1 year membership! Membership could save you hundreds of dollars on future orders.

To enroll, call TOLL-FREE with your order or fill out and mail in the Enrollment & Order Form found elsewhere in this ad.

FREE SOFTWARE



GET 3 FULL DISKS OF MUSIC, ART, ENTERTAINMENT AND PROGRAMS ABSOLUTELY FREE WITH ANY PURCHASE OVER $100!

D.U.D.E.
Directory Utility / DOS Enhancer

GET D.U.D.E. (DIRECTORY UTILITY/ DOS ENHANCER) ABSOLUTELY FREE WITH ANY PURCHASE OVER $200! HARNESS THE POWER OF AMIGADOS WITH JUST A FEW CLICKS OF YOUR MOUSE WITH D.U.D.E. COMBINE THE POWER OF CLI WITH THE SIMPLICITY OF WORKBENCH!

- UP TO TWELVE DIRECTORY WINDOWS ARE VISIBLE AT ONCE SO YOU CAN MANIPULATE YOUR FILES CONVENIENTLY
- DESIGNED TO USE A MINIMUM AMOUNT OF PRECIOUS RAM TO MAXIMIZE MULTITASKING EFFICIENCY
- EVERY ASPECT OF THE PROGRAM CAN BE CUSTOMIZED TO YOUR NEEDS AND PREFERENCES
- INCLUDES A HARD DISK BACKUP FUNCTION!

FROM CENTAUR SOFTWARE, THE DISTRIBUTORS OF B.A.D.

We may substitute with any other software at our own discretion if the supply of the above two items run out. Offer expires Oct. 31st, 1990

Prices and promotions valid from Nov. 1st, 1990 thru Nov. 30th, 1990

Creative™ COMPUTERS

U.S. ORDERS ONLY:
800-872-8882
Canada: 1-800-548-2512

CUSTOMER SERVICE OR ORDER STATUS
213-214-0000

4453 Redondo Beach Blvd., Lawndale, CA 90260 - Mon-Sat 8AM-6PM PST - FAX: 213-214-0932

UPGRADE BEYOND A3000 PERFORMANCE!
with GVPs A3001 Accelerators

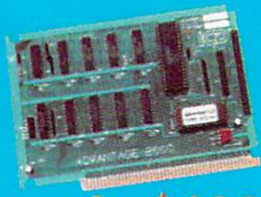


28 Mhz $1499
33 Mhz $1699
50 Mhz $2599

All the above boards are in 68030/68882/4Mb configuration.
For a 40Mb Quantum HD add $389 - for an 80Mb Quantum add $699

THE ICD ADVANTAGE

A new lightning fast SCSI host adapter for the Amiga 2000/2500 computers.



only $139

ADRAM 2080 0/8 MB BRD	145.00
ADRAM 505 INT 512K	59.95
ADRAM 520 0/2 MEG EXP	98.95
ADRAM 540 0/4 MEG INT	125.00
ADRAM 560D 2MB FOR A540	259.00
ADVANTAGE 2000 SCSI	145.00
QUANTUM 40MB HARD DRV	338.00
QUANTUM 80MB HARD DRV	548.00
QUANTUM 105MB HRD DRV	598.00
QUANTUM 170MB SCSI HD	898.00

FLICKER FIXER



$375

SERIES II A500-HD+



NEW FROM GVP

40MB $599

HARDWARE

NEW HARDWARE

AE DATALINK 2000 MNP5	169.00
AE HIGH DENSITY DRIVE	199.00
FLICKER FIXER DEB BOARD	74.95
MEGA MIDGET RAM 0/8MB	319.00
PRORES	339.00
SHARP JX300 SCANNER	CALL
SHARP JX450 SCANNER	CALL
SPIRIT INTERLOK IGL1	550.00
VIP VIDEO INTERFACE	97.95

ACCELERATORS

GVP ACCELERATORS ARE LISTED IN THEIR OWN BOX IN THIS SECTION

MEGA MIDGET RACER	699.00
MIDGET RACER	339.00

AUDIO HARDWARE

AMAS MIDI SAMPLER	124.00
AMPLIFIED SPEAKERS	84.95
CMI MIDI 1 (EXT)	56.95
ECE MIDI 1000	49.95
FUTURE SOUND 500	93.95
MIDI GOLD 500	64.95
MIDI GOLD INSIDER	64.95
PERFECT SOUND 500/2000	70.95
SPIRIT DELUXE MIDI	235.00

FLOPPY DRIVES

A3000 DISK DRIVE/INT	109.00
CA-880 FLOPPY DRIVE	105.00
CSI 3100 SILENT DRIVE	129.00
CSI 3200 SILENT DRIVE	139.00
CUTTING EDGE MAC DRIV	194.00
GVP FD 2010 IMPACT	95.00
GVP FD 2020 IMPACT	130.00

HARD DRIVES AND CONTROLLERS

ADVANTAGE 2000 SCSI	139.00
CSI 6100 AUTOBOOT CRD	79.95
GVP SYQUEST 42MB HDD	699.00
GVP SYQUEST CARTRIDGE	90.00
GVP WT-150 TAPE DRIVE	639.00
GVP XC CASE W/SYQUEST	1149.00
GVP XC CASE W/WT-150	989.00
GVP XC CASE/NO DRIVE	179.00
INFINIT40 DISK CART	119.00
INFINIT40/I REMOVABLE	999.00
INFINIT40S REMOVABLE	1049.00
MICROB HARDFRAME SCSI	229.00
QUANTUM 40AT DRIVE	389.00
QUANTUM 80AT DRIVE	699.00
SONY DATA CART/WT 150	24.95
SUPRA WORD SYNC SCSI	109.00
SUPRADRIVE 80MB A2000	739.00
SUPRADRIVE 105MB A2000	799.00
SUPRA 500XP 20MB W/512K	548.00
SUPRA 500XP 20MB W/2MB	638.00
SUPRA 500XP 40MB W/512K	658.00
SUPRA 500XP 40MB W/2MB	748.00
TINY TIGER II 45MEG	739.00
TRUMP CARD SCSI A2000	129.00
TRUMP CARD SCSI A500	219.00
TRUMPCARD A2000 PROF	209.00
TRUMPCARD A500 PROF	279.00

MEMORY EXPANSION

ADRAM 2080 0/8 MB BRD	145.00
ADRAM 505 INT 512K	59.95
ADRAM 520	61.95
ADRAM 540 0/4 MEG INT	119.00
ADRAM 560D 2 MEG A540	239.00
EXP-8000+ A500 2 MEG	479.00
GVP 030 MEMORY BOARD	599.00
MICROB 8UP M.BRD SIMM	174.95
MICROB. 8UP DIPP W/0K	174.95
MINI MAX 4 0/4 MB RAM	129.00
STARBOARD 2 A1000 0K	239.00
SUPRARAM 2000 0MB RAM	119.00
SUPRARAM 2000 2MB RAM	228.00
SUPRARAM 2000 4MB RAM	348.00
SUPRARAM 2000 6MB RAM	458.00
SUPRARAM 2000 8MB RAM	578.00
SUPRARAM 500 1/2 MEG	61.95
SUPRARAM A500 2MB RAM	239.00
TRUMPCARD META 0/4	159.00

OTHER MISC. HARDWARE

A-MAX II	149.00
A-MAX II PACKAGE	459.00
YAMAHA KEYBOARD	59.95
PRINTERFACE	79.95

MODEMS

BAUD BANDIT MODEM	105.00
BAUD BANDIT MODEM L5	169.00
STAR 2400 BAUD MODEM	89.95
SUPRA 2400 BAUD MODEM	99.95
SUPRA 2400 INT. MODEM	119.00

MONITORS

MITSUBISHI 1381A	CALL
NEC MULTISYNC 3D	699.00
NEC MULTISYNC IIA	650.00
SEIKO 1440 MULTISYNC	649.00
SONY 1303A MONITOR	549.00
SONY 1304 MULTISYNC	779.00

PRINTERS

CITIZEN GSX140 24 PIN	349.00
CITIZEN GSX200 9 PIN	195.00
LASERJET III PRINTER	1795.00
NEC LC SILENT WRITER	3495.00
STAR NX-2410 PRINTER	339.00
STAR NX1000 II PRINTR	169.00
STAR NX1000 RAINBOW	199.00

VIDEO HARDWARE

AMIGA VIDEO TERMINAL	314.95
AMIGEN GENLOCK	97.95
COLOR SPLITTER	119.00
DIGI VIEW GOLD V4.0	127.00
DIGIVIEW GOLD 4.0 PAL	134.00

HARD DRIVE MADNESS SPECIALS!



GVP IMPACT HD/45 A500	709.00
GVP IMPACT HD/80Q A500	1009.00

A2000
ALL GVP HARD DRIVES ARE THE NEW BLAZING FAST SERIES II WITH NO MEMORY EXPANSION.
FOR 8 MB FAST RAM CAPABILITY ADD $50

GVP SERIES II HC/0	159.00

ALL HARD CARD ARE QUANTUM 12MS RELIABLE DRIVES

GVP SERIES II HC/40Q	495.00
GVP SERIES II HC/80Q	779.00
GVP SERIES II HC/100Q	839.00
GVP SERIES II HC/170Q	1099.00
GVP SYQUEST 44MB HDD	699.00
GVP SYQUEST CARTRIDGE	90.00
GVP WT-150 TAPE DRIVE	639.00
GVP XC CASE W/SYQUEST	1149.00
GVP XC CASE W/WT-150	989.00
GVP XC CASE/NO DRIVE	179.00

SUPRA

A500

SUPRA 500XP 20MB/512K	548.00
SUPRA 500XP 40MB/512K	658.00
SUPRA 500XP 20MB/2MB	638.00
SUPRA 500XP 40MB/2MB	748.00

A2000

SUPRA WORDSYNC 40Q	455.00
SUPRA WORDSYNC 80Q	665.00
SUPRA WORDSYNC 105Q	704.00
SUPRA 44R EXT W/SCSI	979.00
SUPRA 44R EXT/NO SCSI	809.00
SUPRA 44R INT W/SCSI	809.00

IVS

TRUMP CARD SCSI A2000	127.00
TRUMPCARD A2000 PROF.	209.00
TRUMP CARD SCSI A500	219.00
TRUMPCARD A500 PROF.	279.00
MOUNTING BRACKET, HDD	19.00
TRUMPCARD META 4/0	159.00
TRUMPCARD META 500 4/0	249.00
INFINIT40S EXT REMOVABLE 1049.00	
INFINIT40/INT. REMOVABLE	999.00
INFINIT40 DISK CARTRIDGE	90.00

GVP HARD DRIVES

A500
FOR NEW SERIES II A500 HARD DRIVES SEE SEPARATE BOX

GVP IMPACT HD/100Q	1119.00
GVP IMPACT HD/20 A500	629.00
GVP IMPACT HD/30 A500	679.00
GVP IMPACT HD/40Q A500	749.00

BARE DRIVES (USE WITH ANY CONTROLLER)

QUANTUM 40MB HARD DRV	338.00
QUANTUM 80MB HARD DRV	548.00
QUANTUM 105MB HRD DRV	589.00
QUANTUM 170MB SCSI HD	898.00

SEIKO CM-1440 MULTISYNC



- 14" SuperFine Pitch Trinitron
- Resolution up to 1024 x 768
- .25mm dot pitch
- Anti glare silica coating

$649!!!

NEWTEK

DIGI VIEW GOLD V4.0	129.00
DIGI PAINT 3	61.00
PANASONIC WV1410	189.00
PANASONIC WV1500X	319.00
COPY/CAMERA STAND	59.95
SUPER BUNDLE/DIGIVIEW	399.00

DIGIVIEW GOLD 4.0, WV1410 CAMERA, COPY STAND, LENS, CABLE



CREATIVE HARDWARE SPECIALS

HP PRINTERS



DESKJET 500 .... 569.00
LASERJET III 1795.00
LASERJET IIP 1095.00



PAINTJET 999.00
PAINTJET FONT CRTRG .. 140.95
PAINTJET XL 2049.00

Supra



2/8 MB Board

ONLY $228

MEMORY (RAM) CARDS:

SUPRARAM 2000 2MB RAM 228.00
SUPRARAM 2000 4MB RAM 348.00
SUPRARAM 2000 6MB RAM 458.00
SUPRARAM 2000 8MB RAM 578.00

SUPRARAM 500 1/2 MEG 61.95
SUPRARAM A500 2MB RAM 239.00

MODEMS:

SUPRA 2400 BAUD MODEM 99.95
SUPRA 2400 INT. MODEM 119.00
MODEM CABLE ADD 7.00

EASYL 1000 TABLET	359.00
EASYL 2000 TABLET	389.00
EASYL 500 TABLET	329.00
FLICK. FIX TO GENLOCK	37.95
FLICKER FIXER	374.00
FLICKER FIXER PAL	399.00
FRAMEGRABBER	569.00
FRAMEGRABBER PAL VERS	659.00
FRAMEGRABBER/256 GRAY	629.00
FRAMEGRABBER/256G PAL	709.00
LENS 16MM NO IRIS	18.95
LENS 16MM W/IRIS	53.95
LIVE! 1000	249.00
LIVE! 2000	349.00
LIVE! 500	309.00
MAGNI 4004 GENLOCK	1595.00
MINIGEN GENLOCK	189.00
MINIGEN PAL GENLOCK	239.00
NERIKI GENLOCK	1798.80
PANASONIC WV1410	189.00
PANASONIC WV1500X	319.00
PROGEN GENLOCK	369.00
SHARP JX100 SCANNER	758.00
SUPERGEN 2000S	1350.00
SUPERGEN GENLOCK	649.00
TCRG 102	719.00
VIDI AMIGA FRAMEGRABR	164.00
VIDTECH SCANLOCK	789.00
VIDTECH SCANLOCK PAL	1149.00
X-SPECS 3D	CALL

INPUT DEVICES

A1000 KEYBOARD	84.95
A1352 MOUSE	89.95
BOING OPTICAL MOUSE	91.95
BOSS JOYSTICK	14.95
CORDLESS MOUSE, THE	92.00
EPYX 200XJ JOYSTICK	11.95
EPYX 500XJ JOYSTICK	10.95
ERGO STICK	17.95
FREEDOM CONNECTION	25.95
GRAVIS CLEAR JOYSTICK	35.95
GRAVIS MOUSESTICK	64.95
GRAVIS SWITCH JOYSTCK	32.49
LIGHT GUN, PHASAR	32.49
MOUSE MASTER	29.95
MOUSE MATS	6.95
NAVIGATOR JOYSTICK	17.95
POWERPLAYERS JOYSTICK	20.95
QUICKJOY III SUPRCHRG	12.95
QUICKJOY JET FIGHTER	17.95
QUICKJOY V SUPERBOARD	22.95
QUICKSHOT 2 JOYSTICK	12.95
QUICKSHOT II PLUS	12.95
SLIK STIK JOYSTICK	7.95
STAR CURSOR JOYSTICK	35.95
STIK-GRIPPER	12.95
TAC-2 JOYSTICK	10.95
TRACKBALL, AMTRAC	64.95
ULTIMATE SUPERSTICK	38.95
WICO 3-WAY JOYSTICK	22.95
WICO BAT HANDLE STICK	18.95
WICO RED BALL JSTICK	18.95
WINNER JOYSTICK	14.95
ZOOMER JOYSTICK	47.95

ACCESSORIES

DISKETTES/DISK ACCESSORIES

BANX DISKETTE BOX	14.95
CLEANING KIT LARGE	12.95
CLEANING KIT SMALL	5.95
DISKETTE, 3.5" DSDD	0.99
DISKETTES, 50 PACK	44.00
SONY COLOR DISKETTES	13.95
SONY DISK 10 PACK	12.95
SONY DISK 5.25" 10 PK	7.95
SONY DISK 5.25" DSHD	11.95
SONY DISK DSHD 10 PK	19.95
SONY DISK DSHD 5 PACK	9.95
WOODEN DISK BOXES	65.00
WOODEN DISKBOX 2 DRWR	45.00

DUST COVERS

COVER UPS A1084 MON	6.95
COVER UPS A1950 MON	6.95
COVER UPS A2000 CPU	5.95
COVER UPS A2000 KEYBD	2.99
COVER UPS A2000 SYSTM	10.95
COVER UPS A3000 CPU	5.95
COVER UPS A3000/A1950	10.95
COVER UPS A500 CPU	5.95
SAFESKIN / A1000	17.95
SAFESKIN / A2000	17.95
SAFESKIN / A3000	19.95
SAFESKIN / A500	17.95

POWER DEVICES

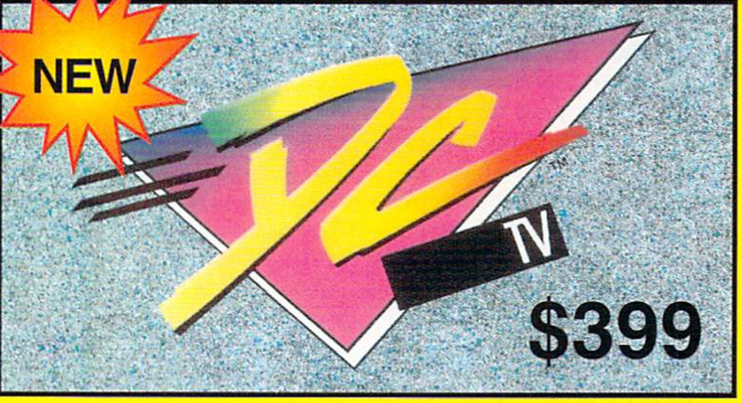
POWER PROTEC W/REMOTE	27.95
POWER SUPPLY HD150	129.95
POWER SUPPLY, IVS	89.95
POWER SUPPLY, SUNTRON	89.95

PRINTER ACCESSORIES

CITIZEN RIBBON (BLACK)	5.95
SWITCH BOX 2-WAY	13.95
SWITCH BOX 4-WAY	22.95
OKIMATE BLACK RIBBON	4.99
OKIMATE COLOR RIBBON	5.99
PACIFIC PAGE	429.00
PACIFIC PAGE FONTS	259.00
PAINTJET BLK CARTRIDG	25.95
PAINTJET COLOR CRTRDG	29.95
PLOTTER IN A CARTRIDG	295.00
PRINTER STAND	20.95
PRINTER STAND 132 COL	49.95
STAR NX-1000 RIBBON	3.95
STAR NX-2400 RIBBON	7.49
STAR NX2410 RIBBON	7.49
STAR RAINBOW RIBBON	8.95

MISC. ACCESSORIES

AUTO DROID	50.95
COMPUTER CLEANER	5.95
COMPUTER SERVICE KIT	18.95
COPY/CAMERA STAND	59.95
DIGI DROID	67.95
FLICKER MASTER	12.95
POWER BASE	39.95
POWER PROTECTOR PLUS	14.95



ASDG and SHARP

The JX-100 ... $758



Features:
- *Portable, full color scanner*
- *200 DPI/24-bit color*
- *Includes Scanlab software*

JX300 & JX450 are available .... CALL

X E T E C

NEW

CD-ROM
for the Amiga®



Call for Price and Delivery

OUR POLICIES

CUSTOMER SERVICE: for tech support call 213-542-2292 from 11 a.m. to 7 p.m. PST.
*SHIPPING INFO: No surcharge for Visa/MasterCard; 4% surcharge for American Express; 1% surcharge for Discover. Call for all other shipping information. Educational, corporate and aerospace purchase orders accepted.

RETURN POLICY: Call Customer Service at (213) 214-0000 for return authorization.
All returns without authorization number (RMA#) will be refused. Returned products must be in original condition and packaging and must be sent back within 30 days of our invoice date. No refunds, please. Defective product exchanges only. We make no guarantees for product performance. Exchanges with unlike products are at our option and subject to a 20% re-stocking fee.
CONDITIONS: Prices and availability of product are subject to change without notice.
MAIL-IN ORDERS: Send money orders or cashiers check for fastest service. Personal checks - up to 10 days to clear. Include: Name, Address and telephone number (no P.O. Boxes, please). If ordering by credit card include expiration date and billing address. Call for exact shipping rates.

INTERNATIONAL TOLL-FREE PHONE NUMBERS:

INTERNATIONAL TOLL FREE ORDERING POLICIES: For Canada, FPO, APO - Minimum order $100. All other countries: minimum order $200. For VISA and MasterCard orders you must FAX or mail a signed photocopy of your credit card - front and back.
INTERNATIONAL PHONE NUMBERS: Orders only please. Canada 1-800-548-2512; Italy 1678-74086; United Kingdom 0800-89-1178; France 19-0590-1099; Australia 0014-800-125-712; Switzerland 046-05-3420

**PRICE GUARANTEE: U.S. Only. Applies to all merchandise advertised by all authorized dealers except merchandise on sale. We will give you our "delivered" price lower than the other dealer's "delivered" price.

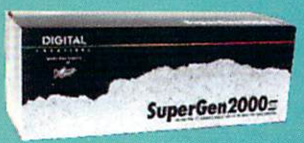
APPLIED ENGINEERING

1.52MB!



AE High Density Drive $199.00
Operates as an 880K drive or 1.52 Meg drive and has an electronic eject button.
AE Datalink 2000 Upgradeable Modem . $139.00
Above Upgraded with MNP-5 .... $179.00
500 Heavy Duty Power Supply $89.95

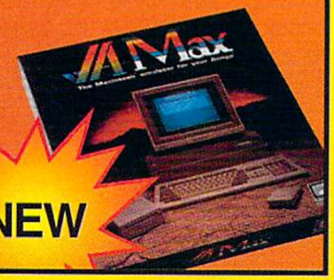
DIGITAL CREATIONS



SUPERGEN 2000S . $1350
SUPERGEN 2000SC .... CALL
SUPERGEN GENLOCK 649.00

ReadySoft

AMAX II $149.00
AMAX II PACKAGE $459.00



NEW

THE GAME PRESERVE

NY Warriors

By Peter Olafson

ONE OF A handful of shoot-'em-ups that behave like stand-up quarter-eaters, NY Warriors explodes onto the Amiga's screen rich with detail. While your green-suited man is burning down everyone in sight, trees blow gently in the wind. Rats run across your path. Clouds of insects hover over trash bins. People pop up from manholes and park benches, and they're not polite at all.

The concept is a bit like *Warriors*, the gang movie of a decade ago. Terrorists have planted a nuclear device in the World Trade Center and are holding New York hostage. They want Manhattan, Greenwich Village, and southeastern Schenectady. (I know, Greenwich Village is part of Manhattan, but this is what it says in the manual.)

Scrolling is multi-directional, and as you progress through eight sections of the city, finding your way out becomes tougher and tougher. Enemies grow decidedly more intelligent—not simply more numerous and trigger-happy—with each of the four levels of difficulty. To help, the game permits stockpiling of resources; up to two improved weapons are accumulated and then automatically substituted when the better one is exhausted.

NY Warriors has a distinctly Amiga feel, as well. A wonderful Sonix-built score kicks things along. If you like, you can toggle it off and just listen to the firestorm of explosions. The detonations (and the game graphics generally) are rendered in a rich, deep palette that lends this forsaken city a kind of hyper-reality. It's almost a shame that the pace is so frenetic, as there's a great deal to take in. Play it once to win. Play it again to see what you can see.

It could have been perfect. I'm a little tired of two-disk games that won't recognize a second drive or support a hard disk. The high-scores screen on my copy was marred by a graphic glitch—a rather tatty ending, considering the pristine quality of what preceded it.

Compared with the artfulness and depth of the game, the failings are petty. NY Warriors is one great shoot-'em-up that belongs in every arcade gamer's collection. *($49.99, Virgin Mastertronic Inc., 18001 Cowan, Suites A & B, Irvine, CA 92714, 714/833-8710. One megabyte required.)*

Crib Notes

By Peter Olafson

DOCKING YOUR SHIP in *Operation Spruance* (Parsec, $49.95) is the toughest part. Grounding is much more likely to end your mission than enemy fire. The best method of berthing the ship that I've found is analogous to parallel parking: Move it slowly (10 percent power), adopt a steep angle of approach, cut back the wheel at the last moment, and put it in reverse. You can do this in forward or reverse, but I found the rear view and reverse controls a little awkward.

Getting away from the dock isn't nearly the problem it appears. Don't bother backing out. You can turn the ship on a dime, and without taking any timbers off the pier. Put it in reverse, crank your rudder full left, and, when the ship is at a 90-degree angle to the dock, kick it into forward and pull your rudder right. If you time it correctly, you'll be pointed between two channel markers.

The first mission isn't bad, provided you react quickly to the two Tomcats at 12 o'clock. Don't pause for a second once you've made them. If they take out any of your systems, you might as well restart. You'll need only Sparrows against them, however, so they're expendable once the jets are down. Other craft can be easily managed if you survive their air-to-ground missiles.

• Hey, nobody said you had to *fight* the orcs on your first mission in *Times of Lore* (Origin, $39.95). Just grab the urn—it's southwest of the clearing—and get out. If you do have to fight, be sure you first get the dagger from the woodsman's house.

• *Ultima V* (Origin, $59.95) should be out for the Amiga soon, and I'll open the new year with a slew of hints for that monster adventure. In the meantime, here are some direction signs for people stalled in the end-game of its predecessor.

What's worse than getting to the entrance to the Chamber of the Codex (that last room is a killer, isn't it?) and not having the answers? Nothing. You're told most of them explicitly within the body of the game, but if you've skimmed over the philosophical stuff, which is not as question-and-answer oriented, you may find yourself all dressed up with no place to go.

For one thing, you'll need a good understanding of the virtues and the principles on which they're based. For another, there's that three-syllable word of passage. You have the syllables, but can't figure their order. Well, think. You've been hearing about truth, love, and courage until you're blue in the face. It's almost as though old Lord British were trying to drill something into you, isn't it? I hope you also wrote down the letters that appeared as you achieved avatarhood in each virtue. If it looks like gobbledygook, remember that the virtues, like the principles, have a certain order.

• I came across some *Dungeon Master* (FTL, $39.95) arcana on one of the networks the other day. You probably think the barbarian Halk is just a bruiser. Not so. If you have him use magic objects, he'll gain a magic point or two. With two, he can cast "LO," which doesn't mean a thing, but with repeated use will give him enough experience to advance a level. (The posting, by a Jason Freund, indicated ►

Continued on p. 84



WHICH WOULD YOU RATHER FACE-OFF AGAINST?

Konami® introduces two more ruthless opponents for your home computer.

Whether you want to get crushed against the boards or have your body drained of blood, the choice is yours.





In Blades of Steel,® control ice-blistering speed and momentum, as you fire the puck past tenacious defenders, duck punches thrown by high-sticking enforcers or even protect the net from 100 mph penalty shots.

And in Castlevania,® journey through the most horrifying maze of evil ever devised, battling unearthly creatures with your mystic whip and masterful senses until you come face-to-fang with the death defying Count Dracula.

So grab your hockey stick and silver cross, then go head-to-head against the kind of competition you've dreamed about. And feared.

KONAMI®

Circle 25 on Reader Service card.

BRiWALL

P.O. Box 129/58 Noble Street
Kutztown, PA 19530

24 Hour FAX Line 1-215-683-8567
Customer Service 1-215-683-5433
Technical Support 1-215-683-5699

S O L I D   P R O D U C T S

C A L L

1-800-638-5757

Outside the USA (1-215-683-5661)

WE'RE MAILORDER SPECIALISTS!

CALL US FOR A QUOTE!

SATISFACTION GUARANTEED!



- ➡In-House Technical Support
- ➡A No-surprises Shipping Policy
- ➡Our FIFTH Year in Business
- ➡No Surchage for Charge Orders
- ➡No Holding of Personal Checks
- ➡A Fair Return/Exchange Policy

ACCESSORIES

64 Emulator	$52
Amtrac (trackball)	**68**
Cables	call
Camera Lens 16mm - No Iris	22
Copy Stand with Light Fixtures	64
Covers	call
DigiView Adapter Gender Chang..	16
Disks - 3.5" DSDD box of 100	77
Flicker Master	14
Ink	call
Joystick - Gravis	35
Marcus RB2-109 Track Ball	45
Mouse Master	29
Paper	call
Ribbon	call
Safeskin Keyboard Protectors	20
Switch Box Fax/Phone	**129**

BOOKS

Advanced Amiga Basic	$15
Amiga 3D Graphics Programming	17
Amiga Basic Inside&Out+	20
Amiga C for Beginners+	15
Amiga C for Advanced Progs+	25
Amiga Companion 2nd Edition	15
Amiga DOS Inside & Out+	17
Amiga DOS Quick Ref Manual	8
Amiga Desktop Video Guide	17
Amiga Graphics Inside and Out+	27
Amiga Hardware Reference Review	18
Amiga Machine Language+	17
Amiga Printers:Inside&Out*	**28**
Amiga Programmer's Handbook 2	20
Amiga System Prog's Guide+	27
Amiga Tips & Tricks+	17
Amiga for Beginners	15
C Primer Plus	21
Dungeon Master Hint Book	**11**
Inside the Amiga with C	21
Making Music on the Amiga	**28**
ROM Kernal Ref:Exec,Lib&Devs	28
ROM Kernal Ref:Includes&AutoDoc	27

GENERAL BUSINESS

Advantage (The)	129
BGraphics	126
DBMAN V	**209**
Excellence V2.0 (1MB)	150
Family Tree (Your)	35
Office*	**189**
Pagesetter II	84
Page Stream V2.0	**192**
Pen Pal	99
Professional Draw 2.0	**129**
Professional Page 1.3	189
Proscript for Prowrite	32
Prowrite V3.0	114
Saxon Publisher	**279**
Scribble - Platinum Edition	72
Security Analyst	48
Service Industry Accounting	252
Superbase Personal	53
Superbase Personal 2	99
Superbase Professional V3.0	225
Superplan	99
Word Perfect v4.1.11	149
Works - Platinum Edition	140

EDUCATION

Algebra Plus	**$33**
Algebra Plus Vol2	**$33**
Distant Suns (Galileo 3)	46
Katie's Farm	**27**
Math Blaster	**33**
Math Talk Fractions	30
Mavis Beacon Typing	34

Barney Bear

Early Education Games for Children ages 3-8.

Barney Bear Goes to School
Barney Bear Goes to the Farm
Barney Bear Goes to Space (new)

These learning games combine sounds, music and speech with interactive stories and activities for the young computer user.

Briwall Price - $23 each

McGee	**27**
Mixed Up Mother Goose	20
Mypaint	33
My Paint Data Disk 1	17
Rhyming Notebook	**29**
Talking Story Book	20
World Atlas 2.0	39

ENTERTAINMENT

688 Attack Sub	**$34**
AD&D - Champions of Krynn	**35**
AD&D - Dragons of Flame	17
AD&D - Dragon Strike*	**34**
AD&D - Pool of Radiance	**35**
Anarchy	**27**
Bandit Kings of Ancient China	**39**
Battle Squadron	24
Black Gold	**27**
Blades of Steel	**30**
Blockout	26
Brain Blaster	**27**
Bride of the Robot	26
Bridge 6.0	27
Clown-O-Mania	23
Codename: Iceman	**39**
Colonel's Bequest	**39**
D.R.A.G.O.N. Force	34
Dragon's Lair II: Singe's Castle	46
Dragon Lord*	**34**
Dragonscape	27
Drakkhen	39
Dungeon Master	26
Dungeon Master 2*	**27**
Earl Weaver Baseball	35
Earl Weaver Stats '89 Disk	**14**

F/29 Retaliator

This top-selling European game is now being distributed in the US by Electronic Arts.

Four battle scenarios and two aircraft offer 99 different missions. Includes air, land and sea strikes, detailed 3D graphics and real-time cockpit displays.

Briwall Price - $34

Falcon	33
Flight Simulator 2	33
Flood	**27**
Fool's Errand	**34**
Future Wars	33

The Immortal

New from EA!

When nightmares come to life you discover you're not immortal.

You're a mighty wizard in search of your lost master in this Will Harvey action/adventure masterpiece. Venture into the dungeon and unravel the mysteries.

Briwall Price - $34

Genghis Khan	**39**
Ghost Busters II	**27**
Halls of Montezuma*	**30**
Hardball II	33
Harpoon*	**41**
Heat Wave: Offshore Racing	**30**
Hero's Quest	39
Highway Patrol 2	**30**
Hole-In-One Golf	26
Hoyles Book of Games	23
Hoyles Games 2	**23**
Ice Hockey: Wayne Gretzky	35
Imperium	**27**
It Came From the Desert	33
It Came From the Desert II	14
Jigsaw Puzzlemania	**20**
Kings Quest 4	**39**
Knights of Legend	**33**
Leisure Suit Larry 3	39
Life & Death*	**34**
Loom	**41**
Matrix Marauders	**27**
Midwinter	**27**
Might & Magic 2	**41**
Mutant Priestess	30
Neuromancer	31
Nobunga's Ambition*	**39**
Operation Spruance	**33**
Overrun	**41**
Pipe Dream	17
Pirates!	30
Planet of Lust	24
Police Quest 2	**39**
Populus	34
Powermonger*	**34**
Pro Football Simulation	23
Projectyle	**27**
Puzznic*	**23**
Red Storm Rising	**36**
Rings of Medusa	33
Scrabble	27
Second Front	**34**
Sextimates	**33**
Sex Vixens from Space	25
Shadow of the Beast	27
Shadow of the Beast 2	**39**
Shark Attack	26
Shinobi	**33**
Shoot'em Up Kit	13
Sim City	30
Sim City Terrain Editor	15
Spherical	**17**
Star Trek V	**33**
Storm Across Europe	**41**
Streed Rod	**27**
Strike Aces	**33**
Sword of Aragon	27
Tennis Cup	**27**
Test Drive 2: The Duel	33
Test Drive 2:European Chalenge	13
The Colony	**33**
The Plague	**27**
Their Finest Hour:Battle Britain	41
Third Courier	33
Tunnels of Armageddon	**27**
Ultima IV	39
Unreal	**34**
Waterloo	41
Weltris	**23**
Where Europe is Carmen SanDiego	33
Where in USA is Carmen SanDiego	33
Where in World is Carmen SanDiego	30
Wings	**34**
Wings of Fury	**27**

CREATIVITY/GRAPHICS

3D Professional	**320**
3D Professional Video	**19**
AniMagic	91
Animation Soundtrack	88
Art Department	59
Art Department Prof.*	**129**
Autodroid	50
AutoScript	84
Broadcast Titler	193
Color Splitter Auto Cable	**45**
Credit Text Scroller	27
Deluxe Paint Version 3	99
Deluxe Video 3	99
Digimate 3	27
Digipaint 3	69
Digiview v4.0 (for 500/2000)	139
Digiworks 3D	84
Director	49
Disney Animation Studio	**119**
Draw 2000	169
Graphics Starter Kit	**65**
Imagine*	**224**
Interchange	33
Intro CAD Plus	108
Kara Fonts	call
Media Line Dsktp & Video Package	24
Outline Fonts	**129**
Palette Printer	20

VIDEO TITLING STARTER KIT

The perfect way to get started in home, school, or industrial video.

Comes complete with:

- ➡Genlock unit
- ➡Titling software
- ➡Video fonts
- ➡All the necessary cables
- ➡A comprehensive manual

Briwall Price - $199

Pixmate	45
Pro Video Post	224
Scene Generator	**33**
Sculpt/Animate 4D	389
Turbo Silver w/Terrain	139
TV Text Professional	109
Ultra Design	255
Video Scape 3D 2.0	129
Video Titler v1.5	106
Vista	**65**

SOUND & MUSIC

Bars & Pipes	192
Deluxe Music Construction	65
Dr T Keyboard C. S. Level II	225
Dr T Keyboard C. Seq. V3.0	177
Dr T's Tiger*	**97**
Dr T's Tiger Cub	65
Music Mouse	**52**
Perfect Sound A500 V3.0	65
Phantom	161
Synthia II	81
Take Note	59

UTILITIES/LANGUAGES

A Talk III	$65
Adapt 68030 Assembler	**120**
Amax II - Mac Emulator	161
Amax - Trumpcard Utilities	79
Ami...Alignment	39
Amiga Workbench 1.3	24
AmiExpress BBS	**170**
Arexx V1.0	35
Assempro	64
Aztec C Dev Pak V5 w/SLDebug	195
Aztec C Prof Pak V5 w/ZEditor	129
B.A.D Disk Optimizer	32
Baud Bandit	33
Buddy System for Deluxe Paint	**34**
Can Do	89
CrossDOS	20
DiskMaster 1.4	33
DOS-2-DOS	39
Doctor Ami..	33
Imagelink 2.0	**177**
Janus Libraries V2.0	**27**

Sterling Service BBS

The friendly Amiga bulletin board system

Sterling Service uses Amiga graphics, pull-down menus and requesters to create an intuitive interface that makes setting up and operating your BBS a breeze.

Briwall Price -- $97

Lattice C++	259
Lattice V5.04 Dev Pacakage	205
Paragon BBS	**107**
Project D v1.1	33
Quarterback V4.0	49
Raw Copy V1.3E	39
Skyline BBS	**109**
Super Card Ami II	**79**
Super Explode	**39**
UltraCard Plus	**65**
X Copy	**33**

We maintain an enormous inventory of software. If you don't see what you want, **CALL!**

Titles marked with * were not yet released when the ad was prepared. Please call for firm price/ availablilty.

Titles in **BOLD** are new items

Australian Customers can order software locally from Briwall Australia at:
(062) 88 0131, or
FAX (062) 88 0337

NEWTEK's Dynamic Duo

Digi-Paint 3

The Ultimate Paint Program

$69

HAM painting package for the Amiga written in 100% assembly language for a fast, powerful, easy-to-use program.

Digi-View Gold 4.0

Simplythe Best!

$139

Digitize images with complete software control of color saturation, brightness, sharpness, hue, resolution and palette.

The Briwall Package -- $485

Digi-Paint 3, Digi-View 4.0, Panasonic WV1410 Camera, 16mm Lens w/variable iris and Copy Stand w/lights

SOLID SUPPORT

BRiWALL

P.O. Box 129/58 Noble Street
Kutztown, PA 19530

VISA

PLEASE COME VISIT US!
Monday - Friday 9AM-6PM EST
Saturday 9AM-12 Noon EST

MasterCard

CALL

1-800-638-5757

Outside the USA (1-215-683-5661)

DRIVE PACKAGES

We have the technical sales staff and trained technicians to help you with a hard drive package purchase.

These package prices are complete, and include all additional hardware required. A500/A1000 packages include case and cables. (On packages with a "*" you can deduct $110 if you don't want the case and cable.) A2000 mounting brackets may be additional.

Drive assembly is $15, or assemble it yourself!

HARD DRIVES Drive Specs.	Drive Price	Advantage A2000 $159	GVP SII HC A2000 $169	GVP SII HC8/0 A2000 $215	Hardframe A2000 $172	Kronos A2000 $186	Trumpcard A2000 $131	Trmpcd-Prof A2000 $219	Micro-Dyn A2000 $75	Kronos* A500 $328	Trumpcard A500 $212	Trmpcd-Prof A500 $285	Micro-Dyn* A1000 $185
32MB-40ms Seagate-3.5	$282	$435	$447	$490	$450	$463	$412	$497	$357	$610	$492	$561	$472
40MB-11ms Quantum-3.5	$403	$556	$568	$611	$571	$584	$533	$618	$478	$731	$613	$682	$593
44MB-25ms Syquest-5.25	$569	$722	$734	$777	$737	$750	$699	$784	$644	$887	$779	$848	$749
Syquest w/ Case&Cart	$875	$1,028	$1,040	$1,083	$1,043	$1,056	$1,005	$1,090	$950	$1,193	$1,085	$1,154	$1,055
48MB-28ms Seagate-3.5	$319	$472	$484	$527	$487	$500	$449	$534	$394	$647	$529	$598	$509
64MB-24ms Seagate-3.5	$369	$522	$534	$577	$537	$550	$499	$584	$444	$697	$579	$648	$559
80MB-11ms Quantum-3.5	$659	$812	$824	$867	$827	$840	$789	$874	$734	$987	$869	$938	$849
84MB-24ms Seagate-3.5	$415	$568	$580	$623	$583	$596	$545	$630	$490	$743	$625	$694	$605
100MB-11ms Quantum-3.5	$712	$865	$877	$920	$880	$893	$842	$927	$787	$1,040	$922	$991	$902
210MB-11ms Quantum-3.5	$1,058	$1,211	$1,223	$1,226	$1,226	$1,239	$1,188	$1,273	$1,133	$1,386	$1,268	$1,337	$1,248

Many other package deals available! Please call!

Supra Corporation

Amiga 2000 Hard Drive Packages
These packages come complete with controller and hard drive, are formatted and ready to use.

Supra Wordsync w/40MB Quantum HD $529
Supra Wordsync w/100MB Quantum HD $827

Amiga 1000 and 500 SupraDrive Packages
These packages come complete with controller, case, power supply, are formatted and ready to use.

	A1000	A500
44MB/Syquest Supra Drive Pkg	$1029	$969
105MB/Quantum Supra Drive Pkg	$989	$929

Amiga 500XP Hard Drive Packages + RAM
20MB with 512K $575 with 2MB $665
40MB with 512K $699 with 2MB $785

GVP

ACCELERATOR BOARDS!

A3001 - 68030-882/28MHz + 4MB	$1549
A3001 with 40MB Quantum	$1899
A3001 with 80MB Quantum	$2149
A3033 - 68030-882/33MHz + 4MB	$CALL
A3050 - 68030-882/50MHz + 4MB	$3199
A500 SERIES II HARD DRIVE SYSTEMS + RAM	$CALL

We carry a COMPLETE line od GVP products!
Please call for other products and prices.

MEMORY PACKAGES

	BOARDS	0K	512K	1MB	2MB	4MB	8MB
A2000	8-up! 1MBx1	$138	n/a	n/a	$250	$370	$602
	Supra 1MBx1	$119	n/a	n/a	$244	$375	$629
	GVP 8/0 1MB SIMM	$215	n/a	n/a	$365	$511	$791
	Ramworks 256Kx4	$115	$153	$193	$267	$415	$687
A500	Baseboard 256Kx4	$119	$158	$198	$272	$420	n/a
	ICD 520 256Kx4	$110	$149	$189	$263	n/a	n/a
	Xtc Fastram 1MB SIMM	$210	call	call	$354	$500	call
	Meta4+case 1MB SIMM	$249	call	call	$390	$536	n/a
	The two	next	boards	are for	owners	with	cases.
	For Xetec Owners	$90	call	call	$240	$386	call
	For Meta4 Owners	$155	call	call	$309	$455	n/a

ACCELERATOR BOARDS

Hurricane 2800 w/030-882/25 0K	$737
Hurricane A500 w/020-881/16 1MB	$726
MegaMidget Racer Bare	$585
MegaMidget Racer 33MHz w/512K	$1495
Midget Racer A2000 w/030 25MHz	$719

CHIPS

4MB (SIMM) for GVP Acc Bd	$599
4MB x 8 bit SIMM	$497
4MB x 1 bit 100ns	$68
DRAM - 1MB x 8 bits SIMM	$79
DRAM - 256KB x 4 bit 120ns ZIP	$16
DRAM - 256KB x 4 bit 120ns	$11
Math Chip 68882 - 25Mhz	$349
Micro Proc Chip 68030 - 25Mhz	$276
SCRAM - 1MB x 4 bit 80ns ZIP	$68
SCRAM - 256K x 4 bit 80ns ZIP	$13

DRIVES (FLOPPY)

AE High Density 3.5" ext.	$210
Applied Engineering 3.5" ext.	$109
Calif. Access 880 3.5" ext.	$125
Master 3A 3.5-inch external	$110
Meiji 3.5-inch external	$115
SupraDrive 3.5" ext.	$109

DRIVES (Hard)

84MB Seagate 5.25" ST296N	$391
100MB Connor 3.5" CP3100	$847
158MB Micropolis 5.25" 1674-7	$1125

GENLOCKS

Amigen	$99
Magni 4010 & 4010S	$1629
Minigen	$215
Neriki 1187 YCS	$2039
Neriki Desktop YC	$1269
SuperGen	$669
SuperGen 2000s	$1869
Vidtech ScanLock VLS-1	$859

MEMORY A500

501-type Clone	$69
EXP-512 512K (501 type)	$53
EXP-8000 2MB	$479
RAM500 Supra (501 Type)	$65
SupraDrive A500 RAM 2MB	$242
WizRAM A500 0.0MB	$95

MIDI/SOUND

A.M.A.S.	$135
CMI External 500/2000	$60
ECE - External A500/1000/2000	$49

MODEMS

Aprotek Mini A500/1000/2000	$79
Baud Bandit	$110
Baud Bandit Level 5	$139
Courier HST 14.4K	$635
Courier HST Dual Std.	$1065
DataLink A2000 int.	$145
DataLink Express ext.	$189
Supra 2400 w/o cable	$111
Supra Modem Plus MNP Level 5	$159
Zoom Modem (2400 Bd)	$109

MONITORS

DiamondScan AUM 1381ATS	$569
ICM 135 Stereo	$299
Moniterm Viking 1	$1419
NEC Mulitsync 3D	$695
Seiko CM-1440	$675
Sony 1302 (multisync)	$789
Sony PVM-1390	$525

MOUSES

Boing Optical	$99
GI-1000 Optical	$79
M4 Contriver	$49
The Cordless Mouse	$99

PRINTERS

Citizen GSX-140	$369
Canon PJ1080a Color Ink Jet	$539
HP Deskjet Plus	$795
HP Laser Series IIP	$1179
HP Paint Jet	$1150
NEC 2200XE	$379
Okidata ML-182 Turbo	$339
Qume CrystalPrint Pub. II	$2799
Sharp JX730 (color ink jet)	$1699
Star NX-1000R Rainbow	$259
Printerface	$82

SCSI ERASABLE OPTICAL

Tahiti 1GB	$7995
Ricoh 570MB (drive only)	$3499
Sony 640MB (w/1 cartridge)	$4899

SCANNERS

Prof. Scanlab (Softw+Hardw)	$795
Han-D-Scan	$309
Migraph Scanner	$360
Sharp JX-300 + Prof Scanlab	$4349

VIDEO

Camera Lens 16mm w/variable iris	$49
Camera Panasonic 1500X	$309
Camera Panasonic WV1410	$189
Color Splitter	$109
Flicker Fixer A2000	$435
Frame Buffer+Capture 1MB	$749
Frame Grabber - 256 Gray Scales	$636
Frame Grabber - Progressive	$539
HAM-E	$299
VIP Video Interface	$109

MISC HARDWARE

A-Net A2000	$615
A-Net A500	$659
Case - Bomarc Tower	$286
CD-ROM External Drive	$699
CD-ROM A2000 Int. Drive	$599
Draw Tablet - Easyl 500	$359
Draw Tablet - Sketchmaster 12x12	$399
EtherNet A2065*	$290
Fast Fax	$599
Kwikstart A1000	$105
MouseTime - A1000 Clock	$33
Multiport Board CMI	$179
PC Powerboard	$499
Power supply - AE A500 100W	$89
Rejuvenator A1000 (bare)	$350
ST506/RLL to SCSI Adaptor	$165
Tool Bus A500 or A1000 w/power	$227

SHIPPING POLICY: ALL ORDERS received before 3PM EST will normally be shipped within 2 business days. All UPS shipments are sent Signature Required/No Driver Release. Add the following shipping charges to your Total software order.

UPS: Ground $4.50 (cont. USA ONLY); Air/Rush $8.00 (includes Puerto Rico/Hawaii); Overnight $12.00 + $2.50 PER ITEM (must be received by 12 Noon.) **Priority Mail**: USA $4.50 (Includes APO/FPO); Canada/Mexico $7.00; Other Foreign $4.00 Handling + Actual Shipping + Insurance.

HARDWARE: Shipping charges for all hardware are $4.50 handling + actual shipping charges + insurance.

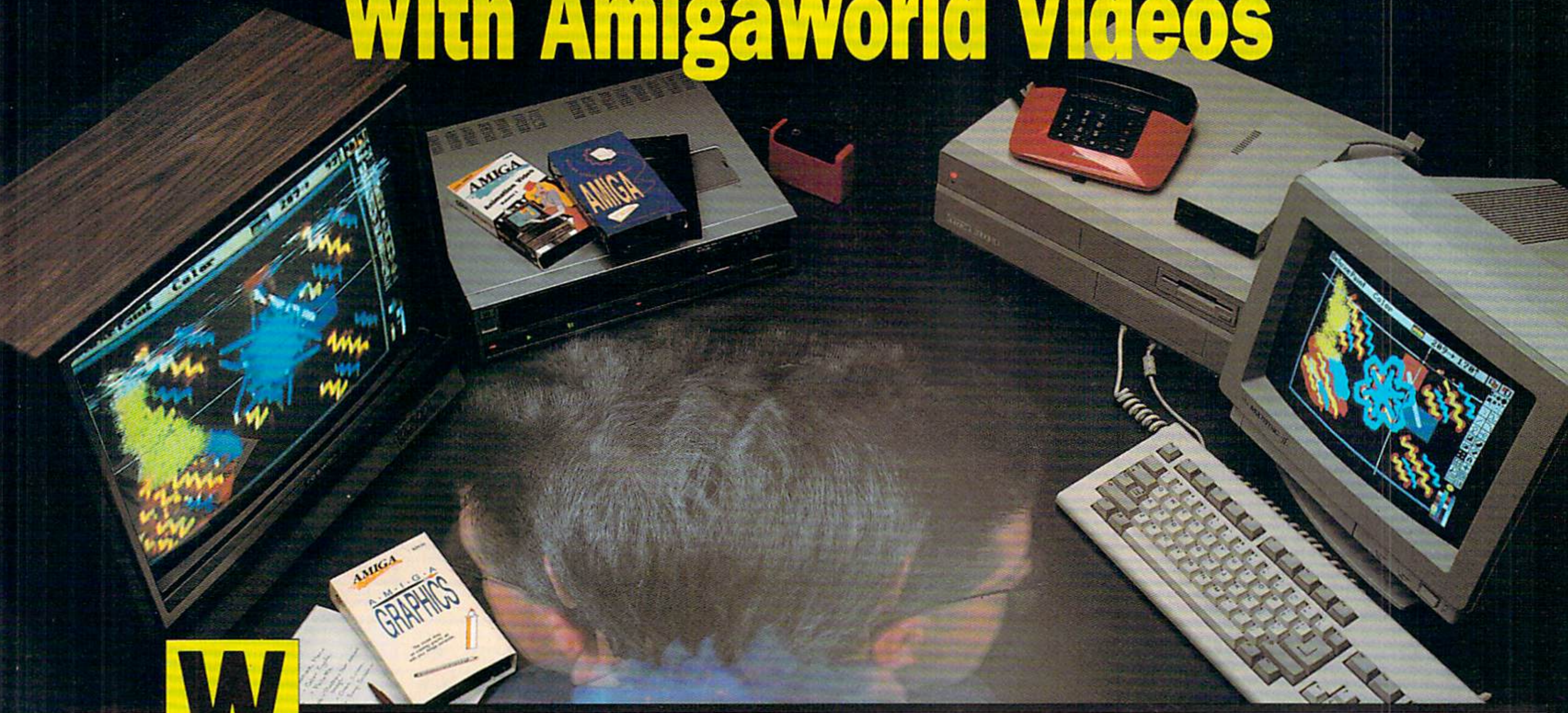
ORDERING INSTRUCTIONS: For your convenience, you can place a phone order 24 HOURS/7 DAYS A WEEK on our TOLL-FREE LINE 1-800-638-5757. Outside the USA, please use (215) 683-5661. Price, availability, and compatibility checks are also welcome on our order line, Monday thru Friday, 9:30AM - 4:30PM EST. AFTER HOURS Orders Only Please! When placing an order, please specify your computer model, home & daytime telephone number, shipping address, charge card number, expiration date and name of bank.

ACCEPTED PAYMENT METHODS: We gladly accept Personal Checks (no holding), Money Orders, VISA, MASTERCARD, School Purchase Orders, or COD ($4.00 additional -- for established Briwall Customers ONLY). All checks must be in US Dollars and drawn on a US bank. There is no surcharge for credit cards and your card is not charged until we ship!

RETURN POLICY (for Non-Entertainment software and Accessories ONLY): We have a liberal return policy to better service your needs. If within 15 days from the time you receive an item, you are not satisfied with it for any reason, you may return it to us for either a refund, exchange, or open credit. REFUNDS ARE SUBJECT TO A 20% RESTOCKING FEE PER ITEM RETURNED ($10.00 MINIMUM PER ITEM.) **EXCHANGES/OPEN CREDITS** will gladly be issued for the full purchase price of the item. **DEFECTIVE** items, Entertainment software, Hardware items and Special Order items will be repaired or replaced with the same item only.

TECHNICAL SUPPORT Call (215) 683-5699, Monday - Friday, 9am - 5pm EST.
We do our very best to help you with your product selections before you order, and after you receive your product. General questions, such as price, compatibility, etc.. will be handled by our order staff at the time you place your order. BUT, if you have specific, detailed questions about a product you will get the most help from our Technical Support Line.

Novice To Expert In No Lapsed Time... With AmigaWorld Videos



Why try to figure it out all by yourself? With AmigaWorld Videos, it's like having a professional computer consultant at your side, 24 hours per day! AmigaWorld Videos cut your learning time dramatically...and you get hints, tips and advice that only the experts know. Watch each video, follow the step-by-step techniques, and hone your skills entirely at your own pace. Then, you can refer to them for brush ups and refreshers. Build your own video library and watch your accomplishments soar! Order your copies today.

NEW! AMIGA MUSIC

From a simple tune to a full concert—the Amiga can help you do it all. This extraordinary video shows you what you need to get started and how to play music with existing software. You'll learn the best ways to sample sounds and manipulate sampled sound to produce dazzling special effects. And if you want to learn more about using a MIDI, this is the video that can help. It explores the uses of MIDI and gives you valuable ideas from some of the best Amiga musicians in the country.

AMIGA GRAPHICS, Volume I

You'll be amazed at how fast you'll be producing excellent art. This hour-long video adventure explores the full capabilities of Amiga art. It delves into computer painting...discusses the pros and cons of the most popular paint programs...tells you when HAM is a good idea...shows you how interlace works...and describes smearing, washing and tinting. Plus you get three extensive sessions on fonts, clip art and even digitizing!

DESKTOP VIDEO

Business presentations, instructional videos and even home movies—this exciting video shows how you can use video with your Amiga. You'll gain valuable insights into evaluating Genlocks, using your camera with professional results, developing effective production operations, creating terrific special effects, adding animation and more. It's a video you won't want to miss!

GETTING STARTED WITH YOUR AMIGA

There's no easier way to master the basics...and some of the more sophisticated operations as well. In a lively and easy-to-follow format, this video starts with assembling your system, feeling comfortable about working with screens, icons, and windows, and becoming a wiz at Workbench. It then addresses some of the more advanced topics of working with CLI, maximizing the use of your utilities and using a modem to expand your horizons.

ANIMATION VIDEO

When the editors of AmigaWorld canvassed the Amiga community looking for the best in Amiga animation, the response was overwhelming! Replies poured in from Amiga master artists as well as super-talented readers. The result—a mind-blowing video featuring dozens of real-world animations demonstrating what's being done and what you can do. Order your copy today...it's already becoming a collector's item!

For immediate ordering service call TOLL FREE 1-800-343-0728 or send in the coupon below.

✔**YES!** I am eager to become an expert!
Please send me the following videos:

- ❑ NEW! AMIGA MUSIC....$29.95 *
- ❑ AMIGA GRAPHICS, Volume I....$29.95
- ❑ DESKTOP VIDEO....$29.95
- ❑ GETTING STARTED WITH YOUR AMIGA....$29.95
- ❑ ANIMATION VIDEO....$19.95

Please include $2.95 for shipping and handling for one video, $5.00 for two or more.

Amount Total $________

❑ Check/Money Order ❑ Mastercard ❑ VISA ❑ AmEx ❑ Discover

Make checks payable to AmigaWorld Magazine or fill in your account information at right.

Account#________ Exp.date________

Signature________

Name________

Address________

City________ State____ Zip________

Available in VHS only. Please allow 4-6 weeks for delivery. Foreign orders, add $7.50 for airmail delivery; $18 for two or more videos. Payment must be made in U.S. funds drawn on U.S. banks. IDG/Peterborough, publisher of AmigaWorld, is the licensed North American distributor of AmigaWorld Videos.

VIDN90

AmigaWorld Video Library ✎ P.O. Box 802, 80 Elm Street, Peterborough, NH 03458 ☎ 1-603-924-9471 ☎ 1-800-343-0728

* available in September

If you ever wondered just how smart you were when you bought your Amiga®, get AmigaVision.™



Remember your original reasons for getting an Amiga? Of course you do. Silly question.

Well, fast-forward now to April 24th, 1990, the day Commodore introduced AmigaVision.

AmigaVision is an authoring system for a mere $149 that allows the Amiga to live up to its full potential.

The easy-to-learn, easy-to use icons you see up on the screen and on this page call up music, animation, text, video—in whatever order or even simultaneously—and create, well, any type of presentation or courseware.

Also, AmigaVision takes full advantage of ARexx, your Amiga's file format standards and its multitasking capabilities.

As you might imagine, you don't have to be a programmer to turn your abstract ideas into reality. All you have to be is you.

Can it extend the use of application software you already own? Is there multitasking interaction with other programs? Is it dBase III™ database compatible? Yes…yes…yes, to all these queries.

For business people, it can create presentations that persuade. For people in education and training, it can help create interactive instructional programs. For anyone, anywhere, it can liberate the way they communicate, whether they are delivering information or entertainment.

Call 1-800-627-9595 soon to find the location of your closest Amiga dealer. For you, it's another confirmation of what you knew before most people: namely how smart Amiga is and how shrewd its owners were when they bought one.

Amiga®. The computer for the creative mind.™

Commodore®

Circle 313 on Reader Service card.

No Dogs, Clubs or Fancy Phone Numbers

TRUMPCARD PROFESSIONAL PACKAGES

Hard Drive Packages-A2000

NEW! HIT OF AMI-EXPO

Seagate

ST138N-1 ...... $489
ST157N-1 ...... $519
ST177N $579
ST277N-1 ...... $539
ST296N $559
ST1096N $609

QUANTUM

40 Meg $579
80 Meg $769
105 Meg $829
170 Meg $1139

Can be used as hard card or hard drive

ALL PACKAGES INCLUDE FREE DELIVERY in the contiguous 48 states

Hard Drive Packages-A500

Seagate

ST 138N-1 .... $549
ST 157N-1 .... $579
ST 177N $639
ST 1096N $669

QUANTUM

40 Meg $649
80 Meg $839
105 Meg $899
170 Meg $1199

These packages include Trumpcard 500 enclosure, IVS Trumcard Pro, SCSI HD controller & software

TRUMPCARD PACKAGES

Hard Drive Packages-A2000

SEAGATE

ST 138N-1 30 Meg-28ms $409
ST 157N-1 49 Meg-28ms $439
ST 177N 60 Meg-SCSI $499
ST 277N-1 60 Meg-SCSI $459
ST 296N 80 Meg-SCSI $489
ST 1096N 80 Meg-24ms $529

QUANTUM

40 Meg $509
80 Meg $689
105 Meg/170 Meg .... $749/$1059

These kits include IVS Trumpcard, SCSI hard drive controller, cable & software. **Hard card form add $29 dollars for mounting frame, please specify hard drive or hard card when ordering.**

Lower Prices

Hard Drive Packages-A500

SEAGATE

ST 138N-1 30 Meg-28ms $489
ST 157N-1 49 Meg-28ms $519
ST 177N 60 Meg-SCSI $579
ST 1096N 80 Meg-24ms $609

QUANTUM

40 Meg $589
80 Meg $769
105 Meg $829
170 Meg $1149

These packages include, Trumpcard 500 enclosure, IVS Trumpcard, SCSI hard drive controller & software

All Packages Include **FREE DELIVERY** In the contiguous 48 states!

GOLDENIMAGE® MICE

Opto-Mechanical **$39**

Fully Optical **$59**

NEW

GOLDENIMAGE® 2 Meg Ram for A2000

(Exp. to 8 meg)

$219*

*FREE DELIVERY in the contiguous 48 states

GOLDENIMAGE® JUST ANNOUNCED! Hand Scanner w/Touch-Up

NEW **$279***

*FREE DELIVERY in the contiguous 48 states

MASTER 3A-1D

w/LED Tracking Display

NEW **$149***

MASTER 3A-1

$99*

*FREE DELIVERY in the contiguous 48 states

800-558-0003 ComputAbility Consumer Electronics 800-558-0003

Since 1982

MicroBotics, Inc. Hard Drive Packages w/ Hard Frame 2000

If a hard card format is needed, add $39 for mounting frame. Please specify hard frame or hard card when ordering.

Seagate

138N-1 30 Meg-28ms . $439*
157N-1 49 Meg-28ms . $469*
177N 60 Meg $529*
1096N 80 Meg $559*

Quantum

40 Meg SCSI $539*
80 Meg SCSI $719*
105 Meg SCSI $779*
170 Meg SCSI $1089*

8 Up! MEMORY BOARD

for A2000 - 0 K

$139*

*FREE DELIVERY in the contiguous 48 states

SupraRam™ 2000

Lower Prices

Memory Boards - A2000

0 K .... $119 Delivered*
2 MB .... $229 Delivered*
4 MB .... $349 Delivered*
6 MB .... $459 Delivered*
8 MB .... $579 Delivered*

FREE DELIVERY In the contiguous 48 states

SupraModem™ 2400

Amiga 500/2000

MODEM CABLE INCLUDED!

$112*

FREE DELIVERY!

Supra WordSync™ Hard Drive Packages-Amiga 2000

Seagate

ST-125N-1 20Meg-28ms $369*
ST-138N-1 30 Meg-28ms $389*
ST-157N-1 49 Meg-28ms $419*
ST-177N 60 Meg $479*
ST-1096N 80 Meg-24ms $509*

Lower Prices

Quantum

40 Meg $459*
80 Meg $649*
105 Meg $699*
170 Meg $999*

*All packages include WordSync hard drive controller, all cables, software, is hard card adaptable and FREE DELIVERY in the contiguous 48 states

SupraDrive Hard Disk System 500 XP

NEW!

500 XP 20 Meg w/512K $549*
500 XP 20 Meg w/2 Meg $639*
500 XP 40 Meg w/512K $659*
500 XP 40 Meg w/2 Meg $749*

CALL TODAY!

*FREE DELIVERY in the contiguous 48 states

SupraRam™ 500

$65*

FREE DELIVERY

Just Everyday Low Prices Since 1982

GENLOCKS

Super Gen ....639 *
Super Gen 2000S ....1419 *
Vidtech Scanlock ....769 *
Ami Gen .... 99 * Mini Gen..........199 *

*FREE DELIVERY In the contiguous 48 states

Pro Write 3.0 $94.95

Flicker Fixer $375*

*FREE DELIVERY

VIDEO PACKAGE

• PANASONIC 1410 CAMERA •
• COPYSTAND W/ LIGHTS •
• DIGIVIEW GOLD 4.0 •

NEW PRICE

PRICE INCLUDES:
16MM LENS W/ VARIABLE IRIS

$399* FREE DELIVERY

KX-P SALE PRINTERS

Panasonic
1124 .... $285
1180 .. $165 1624 .. $349

star
NX1000 Multifont 2 .. $145
NX1000 Rainbow $189
XB 2410 .... $429

CITIZEN
120D 139 200GX 169
180D .... 159 GSX 140 ... 289

OKIDATA
380 299
320 339
390 469
391 639
393 1019

brother
M-1809 339
M-1824L 449
M-1909 439
M-1924L 569
HL-8e Laser 1299
Color Kits .... CALL

Seagate SUPER SALE

LOWER PRICES

ST-125N-1 20 Meg - SCSI 245
ST-138N-1 30 Meg-28 ms............... 269
ST-157N 49 Meg - SCSI 295
ST-157N-1 49 Meg - 28 ms.............. 299
ST-177N 60 Meg - SCSI 349
ST-225N 20 Meg - SCSI 255
ST-277N-1 60 Meg - SCSI 309
ST-296N 80 Meg - SCSI 345
ST-1096N 80 Meg - 24ms 389

LOW Quantum Pro Drives PRICES

40 Meg SCSI $339
80 Meg SCSI $549
105 Meg SCSI $599
170 Meg SCSI $899

MISCELLANEOUS HARDWARE

BASE BOARD ØK $119*
GOLDEN IMAGE RAM 500 $59*

Perfect Sound $69
Color Splitter $109
Migraph Hand Scanner $319
Sharp JX 100 Color Scanner $749
Cordless Mouse $99
Printer Face $79
Gravis Mouse Stick $65
Mega Midget Racer 25 mg. $669
Supercard $75
Midi Interface $48

*FREE DELIVERY In the contiguous 48 states

800-558-0003 **Since 1982 ComputAbility Consumer Electronics** 800-558-0003

688 Attack Sub	31.95
A-Talk 3	64.95
Advantage, The	114.95
Airbourne Ranger	28.95
Altered Beast	31.95
AMOS	67.95
Anarchy	24.95
Animation St-Disney	109.95
Arcade Action Fever Pack	25.95
Arexx	28.95
ASDG Art Department	57.95
Astro Marine Corps	31.95
Aztec C Developer V5.0	177.95
Aztec C Pro V5.0	119.95
B.A.D.	29.95
B.A.T.	31.95
Back to the Future II	31.95
Bards Tale II	38.95
Battle Chess	29.95
Battle Command	31.95
Battle Hawks 1942	20.95
Battle Squadron	24.95
Battles of Napoleon	31.95
Battletech:The Cr Hk Inc.	30.95
Baud Bandit	30.95
Berlin 1948	24.95
Beyond Dark Castle	22.95
Billy the Kid	25.95
Black Gold	24.95
Black Tiger	31.95
Blades of Steel Hockey	28.95
Block Out	25.95
Blood Relatives	31.95
Blue Angels	30.95
Brain Blaster	25.95
Bridge 6.0	25.95
Broadcast Titler	167.95
Buck Rogers	31.95
Budokan	25.95
Can Do	84.95
Captain Fizz	19.95
Carmen SanDiego/Each	30.95
Cham/Sci-Mut.Priestess	30.95
Champions of Krynn	31.95
Chaos	24.95
Check Mate	35.95
Chessmaster 2100	31.95
Clue	24.95
Codename: Iceman	37.95
Colonel's Bequest	37.95
Colony	31.95
Colorado	31.95
Comic Setter	59.95
Comic Art Disks (each)	20.95
Conquest of Camelot	37.95
Crackdown	31.95
Cribbage King/Gin King	25.95
Cross Dos 2.0	24.95
Curse/Azure Bonds	28.95
Cyber Ball	25.95
Cycles	30.95
DB Man	167.95
Dark Century	28.95
Day of the Viper	30.95
Days of Thunder	31.95
Deluxe Music Constr 2.0	61.95
Deluxe Paint III	94.95
Deluxe PhotoLab	94.95
Deluxe Print II	51.95
Deluxe Productions	128.95
Deluxe Video III	94.95
Designasaurus	30.95
Digidroid	59.95
Digimate 3	24.95
Digipaint 3.0	58.95
Digiview Gold	118.95
Director	39.95
Toolkit	24.95
Disk Master	28.95
Distant Sun	41.95
Dos 2 Dos	30.95
Double Dragon II	24.95
Doug's Math Aquarium	48.95
Dr. Doom's Revenge	24.95
Dragon Force	31.95
Dragon's Lair	33.95
Dragon's Lair II	43.95
Dragon Lord	31.95
Dragons of Flame	25.95
Draikhen	36.95
Dungeon Master	24.95
Earl Weaver Baseball	31.95
Comm or MLBPA	14.95
Elan Performer	34.95
Empire	31.95
Escape/Robot Monster	25.95
Excellence 1 Meg	158.95
Eye of Horus	23.95
F-16 Combat Pilot	31.95
F-19 Stealth Fighter	37.95
F-29 Retaliator	31.95
F-40 Pursuit Sim.	28.95
Faces . . . Tris III	24.95
Falcon	31.95
Operation Counterstrike	16.95
Fat Tracks	34.95
Federation	31.95
Fighter Bomber	31.95
Flight Simulator II	30.95
FLO-Floorplan Const. Set	30.95
Fool's Errand	31.95
Future Classics	30.95
Future Wars	30.95
Gauntlet II	31.95
Genghis Khan	41.95
GFA Basic 3.0	87.95
Gold Disk Office	CALL
Grand Prix Circuit	27.95
Gunship	34.95
Hammerfist	31.95
Hardball II	30.95
Harley Davidson	31.95
Harmony	27.95
Harpoon	37.95
Heat Wave	30.95
Heros Quest	37.95
Hillsfar	31.95
Hockey League Sim.	21.95
Hound of Shadow	25.95
Hoyles Book of Games	21.95
Immortal	31.95
Imperium	25.95
Indiana Jones-Action	17.95
Indiana Jones-Graphic	20.95
Innvision +	174.95
Island of Lost Hope	23.95
It Came From The Desert	31.95
Jack Nicklaus Golf	30.95
Kampfgruppe	37.95
Keybd. Control Seq 3.0	159.95
Killing Game Show	28.95
King's Quest 1,2, or 3	30.95
King's Quest 4	37.95
Klax	25.95
Knights of Legend	30.95
Leisure Suit Larry	25.95
Leisure Suit Larry II or III	37.95
Life and Death	31.95
Loom	37.95
Loopz	31.95
Lords of the Rising Sun	31.95
Lords of War	24.95
Lost Patrol	31.95
M-1 Tank Platoon	37.95
M-4 Sherman Tank	31.95
Magic Fly	25.95
Magic Johnson 1 Meg	31.95
Manhunter - NY or SF	30.95
Math Blaster Plus	30.95
Matrix Marauders	24.95
Mavis Beacon Typing	31.95
Microleague Wrestling	24.95
Mid Winter	24.95
Might and Magic II	37.95
Modeler 3D	62.95
Monopoly	24.95
Movie Setter	59.95
Music Mouse	46.95
Music X	169.95
Mutant Ninja Turtles	28.95
Myth	31.95
Nations at War	37.95
Neuromancer	28.95
New York Warriors-1 Mg	30.95
Night Breed	31.95
Night Force	28.95
Night Hunter	23.95
Nuclear War	30.95
Omega	30.95
Omnicron Virus	25.95
Omniplay Baseball: 5 on 5	30.95
Omniplay Horse Racing	30.95
On Line Platinum	58.95
Operation Combat	30.95
Over Run	37.95
Page Setter 2	74.95
Page Stream	119.95
Pageflipper Plus/FX	87.95
Panzer Strike	29.95
Pen Pal	84.95
Persian Gulf Inferno	24.95
Phasar 4.0	54.95
Photon Paint 2.0	87.95
Pic Magic	57.95
Pirates!	28.95
Police Quest 1	30.95
Police Quest II	37.95
Pool of Radiance	31.95
Populous	32.95
Power Windows 2.5	54.95
Powerdrome	25.95
Powermonger	31.95
Print Master Plus	24.95
Pro Tennis Tour	25.95
Pro Video Gold	139.95
Font Packs	59.95
Pro Video Post	189.95
Pro Write 3.0	94.95
Professional Draw	CALL
Professional Page	154.95
Project D+ Backup	30.95
Projectyle	25.95
Puffy's Saga	25.95
Puzzle Gallery II	31.95
Puzzle Storybook	25.95
Quarter Back	42.95
Rampage	24.95
Raw Copy	34.95
Red Storm Rising	34.95
Resolution 101	31.95
Rick Davis Soccer 1 Meg	30.95
Rings of Medusa	28.95
Risk	24.95
Robocop	28.95
Rocket Ranger/35 Troops	31.95
Romance/3 Kingdoms	49.95
Sands of Fire	31.95
Scene Generator	24.95
Scrabble	24.95
Scribble Platinum	87.95
Second Front	31.95
Sex Vixens-Outer Space	22.95
Sextimates	30.95
Shadow of the Beast	31.95
Shadow of the Beast II	37.95
Shadow Warrior	31.95
Shark Attack	24.95
Shufflepuck Cafe	24.95
Sim City	30.95
Terrain Ed.	14.95
Skate or Die	25.95
Smooth Talker	25.95
Space Ace	34.95
Space Quest 1 or 2	30.95
Space Quest 3	37.95
Spell-A-Saurus	29.95
Spirit of Excalibur	30.95
Spot	24.95
Star Flight	31.95
Star Trek: The Final Front.	34.95
Stellar Crusade	36.95
Storm Accross Europe	37.95
Strike Ace	30.95
Strip Poker II	23.95
Stunt Track	21.95
Super Contra	28.95
Superbase Personal	46.95
Superbase Personal 2	87.95
Superbase Pro 3.0	189.95
Superbike Simulator	31.95
Superplan	87.95
Sword of Aragon	25.95
T.V. Show V2.0	64.95
T.V. Sports Basketball	31.95
T.V. Sports Football	31.95
Targhan	24.95
Tennis Cup	24.95
Tetris	20.95
Test Drive 2 - The Duel	30.95
Data Disks. ea.	15.95
Their Finest Hour:	37.95
Thinker	57.95
Third Courier	30.95
Thud Ridge	29.95
Tiger	89.95
Tiger Cub	59.95
Treasure Trap	24.95
Tunnels of Armageddon	25.95
Turbo Out Run	31.95
Turbo Silver 3.0 1 Meg	73.95
Turrican	25.95
TV Text	64.95
TV Text Professional	99.95
Typhoon of Steel	31.95
Ultima 4	38.95
Ultra Design	219.95
Ultracard Plus	57.95
Universe 3	31.95
Unreal	31.95
Untouchables	25.95
Video Effects 3-D	113.95
Video Titler V1.5	92.95
VideoScape 3D	122.95
Vista	64.95
Viva-Amiga	122.95
Voice Recognition	109.95
Vortex	24.95
War of the Lance	25.95
Warhead	31.95
Waterloo	37.95
Wayne Gretzky Hockey	30.95
Weird Dreams	24.95
Welltris	21.95
Wild Streets	27.95
William Tell	25.95
Wind Walker	25.95
Wings of Fury	24.95
Wonderland	30.95
Works Platinum, The	167.95
World Atlas	35.95
World Class Leader Bd	28.95
Xenomorph	31.95
Yeager's Adv. Train 2.0	25.95
Zak McKracken	28.95
Zork Zero	38.95

VISA MasterCard

INFORMATION

414-357-8181 FAX 414-357-7814
P.O. BOX 17882 Milwaukee, WI 53217
HOURS-CST MON-FRI 9am-9pm•SAT 11am-5pm
NO CREDIT CARD SURCHARGE

CALL US TODAY!
AMIGA
C= Commodore
FOR ALL YOUR NEEDS

ORDERING INFO: Specify system. For fast delivery send cashier's check or money order. Personal & company checks allow 14 business days to clear. School P.O.'s welcome. **C.O.D. charges are $4.00.** In Continental U.S.A. include $4.00 for software orders 5% shipping for hardware, minimum $5.00. MasterCard and Visa orders please include card #, expiration date and signature. WI residents please include 5% sales tax. HI, AK, FPO, APO, Puerto Rico and Canadian orders, please add 6% shipping, minimum $5.00. All other **foreign orders add 18% shipping, min $18.00.** All orders shipped outside the Continental U.S.A. are shipped first class insured U.S. mail, where available. If foreign shipping charges exceed the minimum amount, you will be charged the additional amount. All goods are new and include factory warranty. We do not guarantee compatability & version #s. Due to our low prices all sales are final. **All Defective returns must have a return authorization number.** Call (414) 357-8181 to obtain an R.A. # or your return will not be accepted. Prices and availability subject to change without notice. Shipping & handling are non-refundable. We ship the latest versions available to us, updates must be handled by end user directly with the manufacturer. Not responsible for typographical errors.

From p. 76

that Halk may lose his magical ability before he gains the level. You'll have to keep at him.)

Those in search of a really nasty scene should try going back to the dungeon entrance with the Firestaff, but without the Power Gem. The last posting was more a curiosity: Evidently a figure appears if you look back through the door into the Hall of Champions using the "look through solid objects" spell. Anybody know who he is?

• Jason Gordon of Overland Park, KS, wonders whether the rings and hooks on *DM*'s walls are good for anything. I've never found any use for them—too big for my fingers, too small to hang a hat on—but I understand there's at least one spot where they'll come in handy. Besides, in this game, it's a good practice not to let anything go untouched.

• More *Dungeon Master*: Ian Boreyko of Brandon, Manitoba, Canada, writes that he's been stuck for two weeks in a Level 6 room with a pit trap, a teleporter and a switch. (Look for my name on the wall, Ian. I've stayed at that motel, too.) The trick is the interrelationship of those features. The switch controls the teleport field. You'll want to put an item where the field is located. Throw the switch, and the item is whipped around the corner, which makes the trap close. Turn off the field to get the item back, and open the door to get the key.

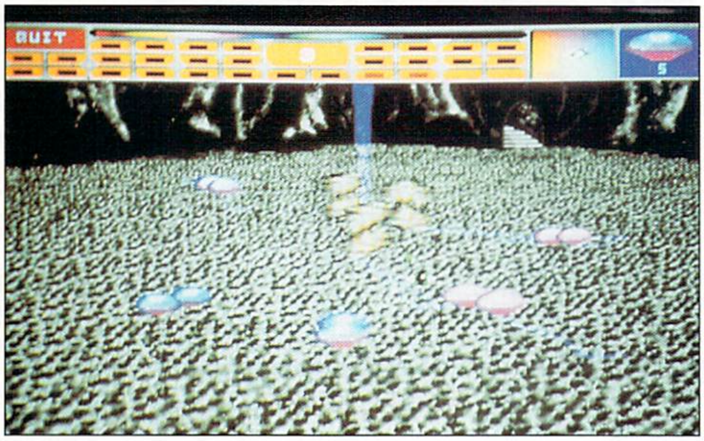
• Kevin Bunker of South Thomaston, ME, offers a clever way to chalk up mind-numbing numbers of experience points in *Bard's Tale II* (Electronic Arts, $59.95). It's quite legitimate, but it capitalizes on a weakness in the game, and if you think man was born to suffer, you may want to skip it. You'll need a spellcaster who can cast "Disrupt Illusion." Now, go out and find yourself a monster band that includes illusion-casting magic-users. (Kev mentions the Makers on Level 4 of Dargath's Tower as an example.)

Cast the "Disrupt Illusion" spells at the opening of combat. Kill off the front men, but leave the spellcasters alone. They'll keep conjuring up illu- ►

Knights of the Crystallion

By Dodson Yaple

A CONGLOMERATION OF several perennial favorites, Knights of the Crystallion takes place in the City of Bone, which was carved from the fossilized remains of an enormous prehistoric beast. As the leader of one of the ossified precincts' loosely-confederated clans, you have to juggle familial and commercial responsibilities while trying to advance your personal quest for spiritual knowledge.



Life is one puzzle after another in a fossil city.

Like Cinemaware's arcade adventures, Knights is a cluster of mini-games featuring detailed graphics, flashy effects, and staggering audio. While its elements are not always as seamlessly integrated as those of a classic such as Rocket Ranger, its sound and HAM graphics can compete on any level. Appropriate music accompanies each segment, running six or seven minutes before recycling, and there is also some very effective digitized speech. An included audio cassette lets you listen without booting the program.

Play revolves around two main sequences—a trading game and a run-around-picking-things-up-while-avoiding-perils game. The latter employs a blessedly simple mouse control that lets you concentrate on monster-zapping and object-grabbing. Similarly, the several satellite games test your brainpower more than your reflexes. You progress steadily against just enough resistance to keep things interesting, instead of getting stuck on a single obstacle for days.

Knights is a two-disk game that loads its various segments as you select them. Fortunately, because it has no DOS-based copy protection, you can minimize access time (and disk swaps) by installing the game in RAM or on a hard drive. Otherwise, there is little to complain about. Knights of the Crystallion is a solid piece of work that nearly matches the best the genre has to offer. *($39.95, JDC, 2549 W. Golf Rd., Suite 500, Hoffman Estates, IL 60194, 708/882-7416. No special requirements.)*

Operation Spruance

By Kevin C. Rohrer

WHEN YOU STEP onto the deck of the destroyer in Operation Spruance (OS), you assume command. Novices should practice navigating the Spruance first, but the more confident (or foolhardy) can jump right into one of the five Persian Gulf missions.

You control the Spruance through nine screens, each accessed via a function key. For example, Threat Board lets you track and identify all air, surface, and sub-surface contacts. You also direct the weapons, both offensive (ASROC, Sparrow, and Harpoon missiles, plus five-inch guns) and defensive (chaff, flares, and decoys). Unfortunately, guided missiles can't be tracked; only Radar allows you to get a look them. Granted, a message states missiles are approaching and gives their direction and speed, but you cannot direct gun and missile fire against them. Even worse, the game ship lacks the high-speed, multibarrel guns, called Phalanx, that are basic to the real warship's missile defense.

Although OS tries to be a true simulation, it has too many inaccuracies and omis- ►

sions to claim the title. The Towed Array and a separate Sonar screen weren't included either, and both are necessary for combatting submarines. Neither can you switch between active and passive sensors, and, worse still, Spruance's two anti-submarine helicopters are absent. Full control over these would have made up for all the game's other weaknesses. Also, the ship's maximum speed is over 50 knots, which is well above the top speed of any real destroyer, and you can go in reverse just as fast!

The game does, however, offer a good feel for commanding a warship. Function keys 6–9 move you from below decks to one of five Bridge positions. From them, you can pan your view 360 degrees, look up and down, and even walk forward. Although the 3-D, filled-vector graphics are good, there is one unfortunate problem: The quay is the same color as the ship, which makes differentiating between them difficult while docking and departing.

OS has possibilities and, with a major refitting, could become the standard for warship simulations. A better manual, the addition of the missing weapons and sensors, and easier piloting controls would make the game an armchair sailor's dream. As it is, however, I recommend you leave Operation Spruance in port. *($49.95, Parsec Software, 2506 S. Golf View, Plant City, FL 33566. No special requirements.)*



Command your own destroyer.

Wings of Fury

By Rob Lawrence

TRY TO IMAGINE watching a devastating World War II battle on a Saturday morning cartoon—in particular a Pacific Theater battle featuring the U.S. Navy's mighty F6F Hellcat fighter with a Looney-Tunes backdrop. If you succeed, you've got a good picture of Wings of Fury.

According to the story, the U.S.S. Wasp is badly damaged and must make its way back to port. As the only pilot on the aircraft carrier (poor recruiting tactics, I guess), you must take to the skies and defend the Wasp against Japanese torpedo planes, battlecruisers, and island guns. For weapons, your Hellcat is equipped with six .50-caliber machine guns, along with your choice of bombs, rockets, or a torpedo.

While the game's graphics do have a slightly comical and cartoonish look, they are definitely up to snuff. The waves in the water change shades of blue, the ships are detailed and colorful, and the pixel-sized deck officers direct you with semaphores. The horizontally scrolling scene zooms in when you fly at low altitudes, providing a more de- ►

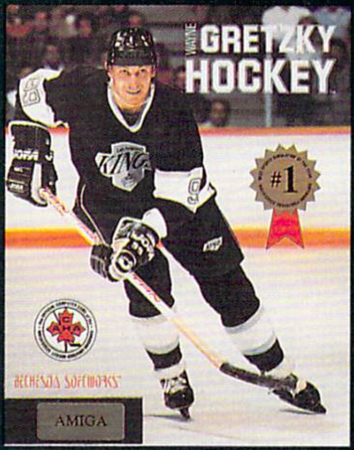


Protect your carrier.

sory creatures, and you'll keep disbelieving in them and getting credit for killing 'em. This can on go on all night. "When you get sick of racking up points and gold, simply move in and slaughter the poor fools," Kevin writes.

- Remy LaFarque of Schenectady, NY, is looking for the magic map and wand in *King's Quest III: To Heir Is Human* (Sierra, $49.95). Both are essential items, as you can't really explore for long without the map or prepare spells without the wand. Begin in the wizard's bedroom. A diligent search of the closet will turn up a parchment and a key. The parchment is blank. . .for now. (You'll figure it out soon enough.) The key fits. . .well, what could it fit? Perhaps you should study harder.
- While rating the Top 20 Games of 1990, the Games Review Board uncovered plenty of helpful tricks. For the remainder of the column, I'll turn over the floor to my colleagues.
- Rob Lawrence suggests keeping to the right on Level 4 of *NY Warriors* (Virgin Mastertronics, $49.95) to reach the subways faster. On Level 7, you should take time to collect some weapons before you proceed. You'll drop everything if you get hit, however, so watch your step.
- Another one from Rob: In *Third Courier* (Accolade, $49.95), there are a pair of "reload" rooms in the aqueducts—one north, one south—that will replenish the ammo in your current weapon. Heaven only knows what they're doing down there, but don't ask questions. Just load up.
- Some rather brutal tactics for *Laser Squad* (MicroIllusions, $39.95): Kill one of your own troopers if that's what it takes to get a clear shot at the enemy. "Chances are the enemy would have shot him anyway," writes Rob. "And remember, enemy units carry less armor on their backs."
- Forsake sensible starts in *The Duel: Test Drive II* (Accolade, $44.95). Practice running the RPMs deep into the red before letting out the clutch. The extra oomph could win the race. (Get pulled over for speeding much, Rob?)
- Fellow driver Graham Kinsey rec- ►

NEED WE SAY MORE?

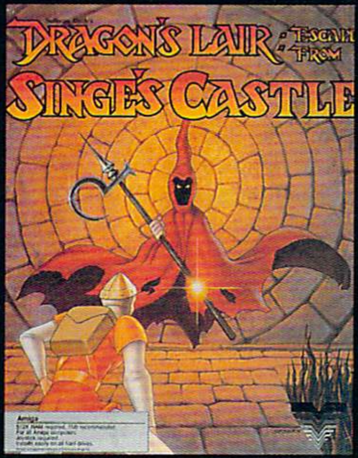


★★★ Best Sports Simulation of the Year! ★★★
Excellence in Software Award 1989 - Software Publishers' Association

"...Could be the best sports simulation yet"
Brit Hume, ***The Washington Post***

"The Best sports simulation on any computer for any sport."
Amiga+ Magazine - December 1990

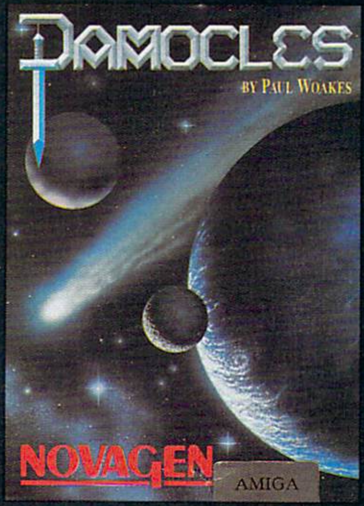
"It's great to see a game that is so true to real hockey. Once again Gretzky proves why he is The Great One."
Amiga World Magazine - March 1989



"Dragon's Lair: Escape is truly state of the art with graphics and gameplay beyond description."
Computer Entertainer, April 1990

"Singe's Castle is a visual delight, I highly recommend it."
Lou Wallace, ***Amiga World,*** July 1990

"...nothing else can come near it in terms of its graphics ... a superb piece of software."
Commodore and Amiga Review, July 1990



"It's Brilliant, Buy it... We give Damocles a resounding 95%"
The One, October 1989

"A superlatively polished adventure brought to life through amazing 3-D 16-bit graphics. Overall 95%"
ZZAP Magazine, March 1990

"A corker of an arcade adventure with totally engrossing gameplay. Damocles is Mercenary to the power of three!"
Zero Magazine, March 1990

BETHESDA SOFTWORKS™

A DIVISION OF MEDIA TECHNOLOGY LIMITED

OUR SOFTWARE SPEAKS FOR ITSELF!

P.O. Box 7877, Gaithersberg, MD 20898, 301/926-8300

Circle 57 on Reader Service card.

tailed view of your plane and the ground. This is especially helpful when strafing the little Japanese soldiers who run down the beach like madmen, jumping about six feet into the air and screaming when they're hit. The game has no accompanying music, but terrific sound effects.

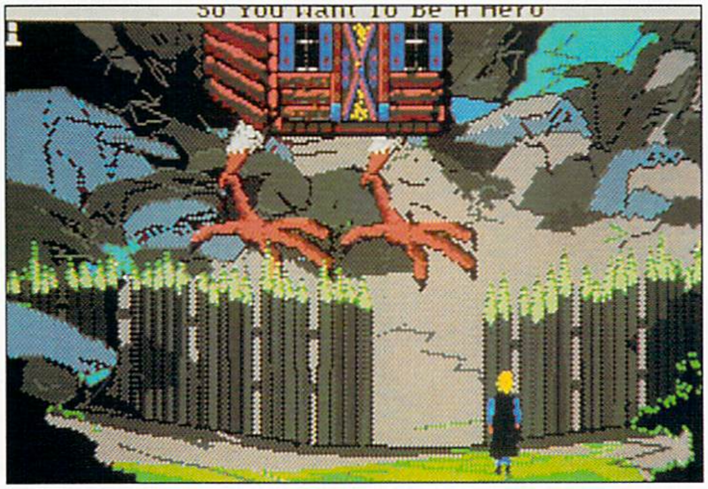
Wings of Fury might sound great, but I quickly lost interest. It did not have enough variation to hold my attention. After a while, each new mission seems to be the same as the last: bomb the islands, strafe the Japs, sink the ships, shoot the planes. If you are 12 or under, you might enjoy it. *($39.95, Broderbund Software Inc., 17 Paul Dr., San Rafael, CA 94903, 415/492-3200. Joystick required.)*

HERO'S QUEST: SO YOU WANT TO BE A HERO

By Graham Kinsey

COMBINING FANTASY role-playing aspects with those of illustrated text adventures, Hero's Quest: So You Want To Be a Hero sets you on a path from a correspondence course on heros to becoming a legitimate (and famous) hero.

You design your character, then guide it through the town of Spielburg and the countryside, completing quests and battling powerful opposing forces. In building your hero, you choose from three basic classes—fighter, magic-user, or thief. You also have initial control over the proficiency of your character in five attributes (strength, intelligence, agility, vitality, and luck) and in various skills, including those associated with other classes.



No one told you about this in the correspondence course.

The game starts in Spielburg, where you purchase basic provisions and converse with the many townsfolk to learn about the available quests (and their rewards). Outside the town, you can find a low-paying job that covers the cost of a room at the town inn each night, thus enabling you to survive at the outset. Only quick reflexes will help you defeat the monsters, which is the only way to earn enough gold for long-term survival; combat in Hero's Quest is strongly arcade-based.

While the plot is fairly solid, presentation is weak. The graphics are pathetic, far more 8-bit than Amiga. The fantasy/role-playing aspects are nothing to get excited about, either, and the text parser is rather crude.

At least the digitized sounds are adequate, and you are able to install the five-disk game on a hard drive. The game will run on accelerated Amigas, but unfortunately this doesn't help you finish it faster. Overall, Hero's Quest was a large disappointment; avoid it. *($59.95, Sierra On-Line, PO Box 485, Coarsegold, CA 93614, 209/683-4468. No special requirements.)*

---

ommends a minimum 200 mph speed for making the jump on the ski-jump track in *Stunt Track Racer* (Microplay, $39.95). On the other hand, *never* use the drawbridge at high speed, and never just drop off the end unless it's all the way down.

• According to Dodson Yaple, in *Shadow of the Beast* (Psygnosis, $49.95), you can master the final hazard—that giant club—with brute force if you have three lives left. Just keep pounding on the wall. If you don't have the lives, you'll have to time your movement to the club's movement, running in to deliver a few punches, then pulling back to safety.

• Of course, getting to the end is the hard part. The requests I receive most frequently are for *Shadow of the Beast* and *Blood Money* (Psygnosis, $49.95) back doors—words you type into the high-score table to become invincible, have infinite lives, or better. (Usually, it's the name of the programmer's girlfriend's dog.) Well, sorry to disappoint you, but I don't know of any. There are code-based cheat hacks for both games. I can't recommend them from experience, but they're available on many bulletin boards. I'll be happy to post them to a couple of the major ones if you want to experiment.

Next issue, however, I'll give you what you've been begging for—as many back doors as I can cram into a column. It goes against my grain, but I'll do it just this once. Call it a Christmas present. Don't spend it all in one dungeon.

COMPANIES MENTIONED:

Accolade, 550 South Winchester Blvd., Suite 200, San Jose, CA 95128, 408/985-1700.

Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404, 415/571-7171.

FTL Games, 6160 Lusk Blvd., C-206, San Diego, CA 92121, 619/453-5711.

MicroIllusions, 17408 Chatsworth St., Granada Hills, CA 91344, 818/360-3715, 800/522-2041.

MicroPlay, distributed by Microprose, 180 Lakefront Dr., Hunt Valley, MD 21030, 301/771-1151.

Origin Systems, 110 Wild Basin Rd., Suite 330, Austin, TX 78746, 512/328-0282.

Parsec Software, 2506 S. Golf View, Plant City, FL 33566, 813/757-0360.

Psygnosis, 17 St. Mary's Court, Brookline, MA 02146, 617/566-1569.

Sierra On-Line, PO Box 485, Coarsegold, CA 93614, 209/683-4468.

Virgin Mastertronic Inc., 18001 Cowan, Suites A & B, Irvine, CA 92714, 714/833-8710. ■



Slick up your joystick it's hot!
ACTION!
Fight in the city slums...
WILD STREETS
AMIGA
ATARI ST
PC
CBM 64
AdLib SOUND
A supercop and a black panther team together in a high risk mission."A top cia agent has been kidnapped,find him! You know that action and fighting is inevitable". You'll have to visit the city slums to find him and protect you both from mobsters, punks and riff raffs.
Arrest the captives!
DARK CENTURY
AMIGA
ATARI ST
PC
AdLib SOUND
Discover the first arcade game designed in ray-tracing technology (synthesized pictures). You control the greatest high-tech tanks in the world.You are on a prison planet trying to arrest some escaped convicts. Program and lead your team of tanks. Ray traced 3D universe, multitasking, one or two players.
Ready to drive and shoot!
HIGHWAY PATROL II
AMIGA
ATARI ST
PC
Parked on the side of an interstate in the arizona, you are waiting for your mission in your car. Suddenly comes an APB from your radio: "alert to all units, a fugitive killer has escaped . Use caution." Drive fast to intercept him! Watch out for flat tires and empty fuel tanks. You may leave the road and drive through the desert, use your compass and your map or you will loose your way...Good luck to prove your nickname "the Ranger!!"
TITUS™
Save the world from terrorists!
FIRE & FORGET II
AdLib SOUND
AMIGA
ATARI ST
PC
CBM 64
You are the pilot of THUNDER MASTER II, the ultimate fighting vehicle able to convert itself into a genuine airborne attacker, equiped with ionic phasers and missile launcher. You are engaged in the hot pursuit of terrorists. Go into combat and be confronted by enemies as different in their appearence as in their combat techniques. Pick up weapons, ammunitions and fuel. Destroy the leading vehicle, before the ultimate explosion!
THE ACTION CONCEPT
20432 CORISCO STREET,
CHATSWORTH CA 91311.
818/709-3693
© Titus 1990, Titus Software Corporation. All rigthts reserved. Wild Streets, Dark Century, Fire & Forget II, Titus and the Titus logo are registered trademarks of Titus Software Corporation. Highway Patrol II is a registered trademark of Titus Software Corporation under license from Microids. All other trademarks aknowledged. Titus reserves the rights to make modifications in the products at any time and without notice.
Circle 17 on Reader Service card.

GO AMIGO!™

THE WORLD'S LARGEST DISTRIBUTOR OF AMIGA™ PRODUCTS

ProWrite 3.0

The new standard in wordprocessing

$109.00



New Horizons

Free Upgrade!

*Buy Professional Page now and get a **free** upgrade to Version 2.0!*



The Best Gets Even Better!

GOLD DISK

Gold Disk Office is now in stock!

ICD Specials!

- *Advantage Hard Disk Controller:* **$149.00**
- *AdRam 2080 (0K):* **$149.00**
- *Adram 540 (0K – up to 4MB):* **$135.00**
- *Adram 560 (Expand AdRam 540 to 6MB):* **$259.00**

We carry all ICD Products!

Supra Corporation

2400 Baud Modem with Cable

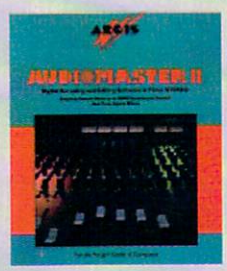
$107.00

A2000 Hard Drive Special: Wordsync w/48MB $399

AudioMaster III

AEGIS
a division of Oxxi, Inc.

- *Higher Sampling Rate*
- *Easier Editing*



- *New Interface*
- *Compressed Data*
- *Supports all Samplers*

$79.00

Bars & Pipes



- *Top Rated Sequencer*
- *Complete MIDI Editor*
- *For Any Level Musician*
- *Total Expandability*

$169.00

800-BE-AMIGA: THE AMIGA SOURCE

SOFTWARE SPOTLIGHT!

GRAPHICS

- Animator/Images 67
- New! Autoscript 95
- Award Maker Plus 34
- Award Maker Sports Disk 20
- New! B Graphics 126
- Board Master 74
- Butcher 2.0 25
- Calligrapher 69
- Comic Setter 69
- Comic Setter Data Disks 25
- Design 3D 69
- Digi-Droid 74
- Digi-Mate III 31
- ▼ Digi-Paint 3.0 62
- Digi-View Gold 4.0 129
- Elan Performer 2.0 99
- Fancy 3-D Fonts 55
- Font-Works 67
- Frame Grabber SW 74
- ● Imagine 239
- Interchange 40
- Interchange Object 15
- InterFont 82
- Modeler 3D 59
- Opticks ....Call
- PageRender 3D 108
- Photon Paint II 99
- Photon Paint Expansion 23
- Photon Video EDLP ....Call
- New! Pixel 3D 92
- Pixmate 54
- Print Master Art Gallery 1 or 2 20
- Print Master Fantasy 22
- Print Mastr Fonts Borders ..24
- Print Master Plus 33
- New! RESEP 56
- Scanlab ....Call
- Sculpt 3D-XL 130
- Sculpt-Animate 4D 399
- Sculpt-Animate 4D Jr. ....Call
- Turbo Silver Terrain Disk 22
- Turbo Silver 109
- Turbo Silver Conversion 15
- Turbo Silver Video 30
- Vid Gen 99
- Videoscape 3D 2.0 122
- New! VideoScape Promotion 56
- ● Wrap Session 59

VIDEO

- Abacus Desktop Vid Book ..18
- Animagic 66
- Animation: Editor 40
- Animation: Effects 35
- Animation: Flipper 40
- Animation: Multiplane 69
- Animation: Rotoscope 53
- Animation: Soundtrack 89
- Animation: Stand 35
- Animation: Video Titler 44
- Animator: Apprentice 225
- Animotion 67
- Broadcast Titler 199
- Caligari Consumer 185
- New! Gredit Text Scroller 30
- Digi-Works 3D 90
- Director 45
- Director Toolkit 28
- Director Video Tutorial 31
- New! Disney Animation Studio ..114
- Easy Titler 34
- Fantavision 39
- Invision Plus 199
- Lights Camera Action 58
- Movie Setter 68
- Movie Setter Data Disks 24
- PageFlipper F/X 101
- Photon Vid. Cel Animator .108
- Photon Vid.Transporter 215
- Pro Video Gold 199
- Pro Video Gold Fonts (ea) ..77
- Pro Video Post 219
- Scene Generator 29
- ● ShowMaker ....Call
- Super Prompt 399
- New! 3-D Text Animator 36
- New! Title Page 129
- TV Graphics 36
- TV*Show 74
- TV Text Professional 112
- Video Effects 3D 142
- Video Titler v1.1 99
- New! Vista 74
- VIVA! 140
- Zoetrope 92

CAD

- New! 3D Professional 299
- A Cad 146
- New! Deck Builder's CAD 58
- Draw 2000 149
- Home Builder's Cad 139
- Home Builder's Choice 55
- Home Builder's Library 34
- Home Builder's Print 79
- IntroCAD 63
- IntroCAD Plus 94
- New! Professional Draw 2.0 134
- Structured Clip Art 38
- Ultra Design 229
- X Shell Pro 139
- X-Cad Designer 112
- X-Cad Designer Pro 339

ART & FONTS

- New! 600 Amiga Fonts 37
- New! Airships 32
- Aircraft Pics 36
- Aloha Fonts (each) 15
- New! Amiga SciFi 52
- AmiZoo 34
- Architectural Design 24
- Ashas Fonts 64
- Bird Pics 25
- China Pics 27
- Clip Art Disks 1-8 (each) 15
- Desktop Artist 23
- E-Clips 74
- New! EPS Clip Art 26
- New! For Art's Sake 16
- Future Design 24
- ● GEN Animations 37
- Heraldic Pics 27
- Human Design 24
- Kara Anim Fonts 1 32
- Kara Anim Fonts 2 32
- Kara Headlines 1 or 2 53
- Lon's Fonts 24
- Maps Pics 44
- New! Maps Pics USA 39
- Masterpiece Fonts 149
- Media Line Fonts 26
- Microbot Design 24
- New! Pic-Magic 65
- PixelScript Fonts 1 54
- PixelScript Fonts 2, 3 or 4 ..47
- PixelScript Ornaments 47
- PixelScript Sampler 47
- Planets 29
- Pro Font Library 54
- Pro Page Outline Fonts 129
- Quick Art 27
- Sex Fonts 26
- Starships 2050 30
- New! Space Design 29
- New! Story Book Capitals 36
- Studio Fonts 32
- Subheads 55
- New! SuperClips 22
- ● Vermont Seasons 29
- New! Woodlands 29
- ● World Symbol Library 34
- Zuma Fonts 25

BUSINESS

- Advantage 129
- New! BG Calc 106
- Budgeteer 34
- Critic's Choice 178
- Desktop Budget 48
- Easy Ledger 199
- New! Gold Disk Office 184
- New! Home Accounts 83
- Investor's Advantage 79
- Money Mentor ....Call
- Nimbus 1.3 (New Version) .99
- PHASAR 4.0 61
- Project Master 130
- Publisher's Choice 139
- New! Real One 106
- Securities Analyst 56
- Service Industry Accounting 274
- Take Stock 34
- Tax Break (1989) 57
- The Accountant 189
- The Works! Platinum 199
- New! Time Waste Management ...56
- New! Top Form II 62
- WordPerfect Library 93

WORD PROCESSING AND DTP

- CygnusEd 67
- Excellence!2.0 (1MB) 159
- Kind Words 2.0 74
- Micro Text 25
- Page Setter II 79
- PageStream 129
- PageStream Fonts (each) ...27
- PageStream Fonts (Mag. Images) 28
- ● PageStream Forms 28
- Pen Pal 99
- Pro Templates 38
- Professional Page 1.3 ....Call
- ProFonts (each) 26
- ProScript 33
- ProText 139
- ProWrite 75
- Scannery 174
- Scribble! Platinum 99
- New! UltraForms for Pagestream 56
- New! UltraForms for ProPage 56
- WordPerfect (Updated!) ...179

COMMUNICATION

- A-Talk III (New Version) 70
- Baud Bandit 35
- BBS-PC 106
- Online! Platinum 66
- Skyline 99
- Tele Tutor 21

GAMES

- 3D Pool 27
- 4th & Inches 30
- AB Zoo 28
- After The War 36
- Airborne Ranger 36
- Alien Legion 36
- All Dogs Go To Heaven 36
- All Time Favorites 42
- AMC 36
- Amiga Karate 24
- New! AMOS 70
- New! Anarchy 29
- Andromeda Mission 28
- APB 31
- Aquaventure 29
- Archipelagos 29
- Arena 15
- Art Of Chess 24
- Art of Go 42
- Asterix 36
- Astrarath 36
- Aunt Arctic Adventure 27
- Auto Duel 28
- Baal 20
- Bad Company 36
- Bad Dudes 31
- Balance of Power 31
- Ballistix 22
- New! Bandit Kings of Ancient China 44
- ● Barbarian II 29
- Barbarian 27
- Bard's Tale II 43
- Batman the Movie 31
- Batman 34
- Battle Chess 34
- Battle Squadron 29
- Battle Tech 34
- Battleship 20
- ● Beam 23
- Bermuda Project 31
- Beyond Dark Castle 41
- Bionic Commando 28
- Black Cauldron 29
- Black Jack Academy 29
- Black Shadow 25
- New! Black Tiger 36
- New! Blades of Steel 32
- Blitzkrieg/Ardennes 42
- Blood Money 28
- Blood Wych Data Disk 18
- Blood Wych 36
- Blue Angel 69 28
- New! Blue Angels 36
- Bobo 24
- New! Boing the Game 31
- Bomb Busters 23
- Bombuzal 29
- Breach 2 34
- Breach Scenario 19
- Breach 29
- Bride of the Robot 31
- Bridge 5.0 27
- Bubble Ghost 29
- Buffalo Bill 36
- New! Calculation 25
- California Games 29
- Capone 28
- Captain Fizz 21
- Carrier Command 33
- Casino Fever 26
- Centerfold Squares 24
- New! Chariots of Wrath 27
- Charon 5 24
- New! Chinese Karate 31
- Chrono Quest 34
- Circus Attractions 29
- Clown-O-Mania 28
- New! Code Name Iceman 42
- New! Colonel's Bequest 43
- Colorado 36
- Colossus Chess 27
- Combat Course 27
- Conflict Europe 36
- Corporate Raiders 31
- Cosmic Bouncer 21
- Cosmic Pirate 37
- New! Cosmo Ranger 36
- Courtroom 36
- New! Crackdown 36
- Craps Academy 26
- Crash Garrett 27
- Crazy Cars 27
- New! Crossbow: William Tell 31
- Crossword Creator 35
- Crystal Quest 36
- Cyber Complex 25
- Cycles 29
- Daily Dbl. Horse Racing 24
- Damocles 31
- Danger Freak 24
- New! Darius 36
- Dark Century 32
- DataStorm 27
- New! Day of the Viper 36
- Deep Space 21
- Defenders of the Earth 36
- Denaris 28
- Detonator 28
- Devonaire 34
- Distant Armies 31
- Dive Bomber 37
- Dominator 29
- Dominoes 18
- Double Dragon II 31
- New! Double Dribble 32
- Dr. Doom's Revenge 31
- Dragon Spirit 31
- Dragon's Lair II 47
- Dragon's Lair 38
- Dragonscape 31
- Drakkhen 41
- Dream Zone 31
- New! Duck Tails 32
- Dungeon Master Asst. 24
- Dungeon Master Editor 24
- Dungeon Master Hint Disk .15
- Dungeon Master 29
- Dungeon Quest 34
- New! Dynasty Wars 36
- New! Dyter 07 29
- Eliminator 28
- Emperor of the Mines 37
- Enunciator 17
- Eskimo Games 28
- European Scenery 20
- Evil Garden 16
- Exolon 28
- Eye of Horus 29
- New! F29 Retaliator 36
- F40 Pursuit 31
- Faery Tale 29
- Falcon Scenery 20
- Falcon 34
- Famous Course Disk 17
- Fast Break 30
- Femme Fatale Data 17
- Femme Fatale 28
- Feud 18
- Fiendish Freddy 35
- Fighter Bomber 44
- New! Fighter Bomber Mission Disk 35
- Final Mission 25
- Fire & Forget 27
- Fire Brigade 33
- New! First Contact 36
- First Person Pinball 36
- Fish 31
- Flight Simulator 2 32
- New! Flimbo's Quest 36
- Fool's Errand 37
- Formula One 21
- Four In One 22
- Fright Night 28
- Frost Byte 21
- Galactic Invasion 19
- Ganymed 22
- Garfield's Winter Tale 36
- Garfield 36
- GeeBee Air Rally 28
- Gemini Wing 29
- Genius 29
- Ghouls & Ghosts 29
- New! Globulus 21
- Grand Prix Circuit 30
- Grand Prix Master 34
- Guerrilla War 31
- Gunship 37
- New! Hardball 2 36
- New! Heart of the Dragon 36
- Heat Wave 33
- HellRaiser 35
- New! Hero's Quest 42
- Heroes of the Lance 29
- High Steel 28
- New! Hiway Patrol 32
- New! Hockey League Simulator ...31
- Hole In One Courses 15
- Hole In One 25
- Hollywood Poker 25
- Holmes 37
- Hometown USA 29
- HoneyMooners 29
- New! Hot Rod 36
- Hoyles Book of Games 28
- Human Killing Machine 28
- Hyperforce 35
- I Ludicrous 25
- Indiana Jones (Doom) 28
- Infestation 29
- Insanity Fight 29
- International Soccer 28
- Iron Trackers 31
- J Nicklaus Couse Disk 2 18
- J Nicklaus Golf 37
- Japan Scenery 20
- Jaws 29
- Jetsons 29
- Jet 35
- Jigsaw Puzzlemania 25
- Jinks 21
- Karate Kid II 28
- Kennedy Approach 30
- Kid Gloves 36
- King Arthur 37
- New! King's Quest IV 41
- Kingdoms of England 32
- New! Klax 29
- Knight Force 31
- New! Kursk Campaign 43
- Lancaster 31
- Lancelot 29
- Last Duel 28
- Last Inca 28
- New! Last Ninja II 36
- Leathernecks 29
- Legend of Djel 36
- Legend 29
- New! Legend of Sir Fred 36
- New! Leisure Suit Larry III 44
- Licence to Kill 29
- Liesure Suit Larry II 34
- Lombard Rally 29
- Lost Dutchman Mine 35
- Magic Candle 39
- Magic Johnson Hoops (1MB) 28
- Major Motion 27
- New! Malta Storm 43
- Manhunter 2 - New York 35
- Maniac Mansion 34
- Marble Madness 19
- New! Matrix Marauder 29
- Mean 18 27
- Menace 24
- Metropolis 31
- New! MicroLeague Wrestling 29
- New! Midwinter 36
- Millenium 2.2 37
- Mind Roll 22
- Mission ConBat 35
- New! Moscow Campaign 43
- MTB: Barbarossa 46
- MTB: Central Germany 46
- New York Warriors 35
- Night Hunter 29
- NightDawn 25
- Ninja Mission 18
- New! No Excuses 16
- North & South 34
- Obliterator 30
- Off Shore Warrior 29
- Omega 36
- Omni Play Basketball 37
- Omni Play Horseracing 36
- Operation Clean Streets 28
- Operation Combat 29
- New! Operation Overlord 56
- New! Operation Spruance 36
- Operation Wolf 28
- Out Run 34
- P.O.W. 28
- P47 Thunderbolt 35
- PacLand 29
- Paladin Scenario 19
- Paladin 29
- Paperboy 36
- Paranoia Complex 32
- Persian Gulf Inferno 29
- Personal Nightmare 29
- Phantasm 24
- Phaser Gun 45
- Phobia 37
- New! Photon Storm 31
- Pictionary 36
- Pioneer Plague 27
- New! Plague 29
- Planet of Lust 29
- Platoon 31
- Pocket Rockets 29
- Poco Man 31
- Poker Solitaire 24
- New! Police Quest II 42
- ● Pool of Radiance ....Call
- Populous Worlds Disk 21
- Power Struggle 29
- Prison 28
- Pro Football Simulator 27
- Project Neptune 27
- New! Pyramax 31
- Pursuit to Earth 29
- Qix 27
- Quartz 36
- Quest For Time Birds 36
- Questron II 35
- New! Raider 24
- Rambo III 27
- Rampage 27
- Realm of the Trolls 37
- Realm of the Warlock 25
- Red Heat 39
- New! Red Storm Rising 43
- Renegade 28
- Rennaisance 27
- New! Resolution 101 36
- Revenge of Defender 27
- Rick Dangerous 37
- Ringside 29
- Road Raider 27
- Robo-Cop 36
- Rock Challenge 27
- Rocket Ranger 33
- Roger Rabbit 31
- Roll Out 27
- Roller Coaster Rumble 30
- Romance of 3 Kingdoms 46
- New! Rommel at El-Alameinr 43
- New! Rommel at Gazala 43
- New! Rotor 29
- RVF Honda 31
- Scary Mutants 27
- Scenery Disk 7 or 11 18
- Scenery Disk 9 20
- New! Scenery Starter 44
- New! Sea Haven Towers 25
- Seconds Out Boxing 21
- Sex Vixens From Space 29
- Shadow of the Beast 29
- New! Shadow of the Beast II 42
- Sherman M-4 36
- Shufflepuck Cafe 29
- Side Arms 29
- Side Show 31
- Sidewinder 21
- Sidmon 49
- Silent Service 24
- Silicon Dreams 25
- Sim City Terrain Editor 17
- SimCity 31
- Sky Chase 28
- Sky Fighter 19
- SlipStream 17
- Snake Pit 24
- Snoopy 36
- Soccer Match 27
- Soldier 2000 36
- Soldier of Light 36
- Solitaire Royale 22
- Sorcerer Lord 28
- Space Ace 39
- Space Cutter 20
- Space Harrier 2 36
- Space Harrier 36
- Space Racer 21
- Space Ranger 18
- New! Space Rogue 36
- Space School Simulator 24
- Space Station 16
- Spherical 29
- Spin World 25
- Spitting Image 29
- Spy vs. Spy 2 18
- Star Goose 29
- Star Ray 31
- Stellar Crusade 41
- Stock Market Game 19
- Street Fighter 29
- Strider 29
- New! Strike Aces 36
- Strip Poker Data (each) 15
- Strip Poker II 28
- Stryx 23
- Stunt Car Racer 34
- Sub Battle 34
- Super Scramble 29
- Synapse 24
- T.A.C.L. 74
- New! Table Tennis 28
- Tale Spin 37
- Tank Attack 22
- Targhan 36
- Targis 27
- Techno Cops 34
- Teenage Mutant Ninja Turtles 31
- Tele Epic 27
- Telegames 26
- Telewar II 27
- Telewar 29
- Tennis Cup 31
- Terrorpods 28
- Test Drive II Data (each) 15
- Test Drive II Muscle Cars 15
- Test Drive II 30
- Tetris 25
- Theme Park Mystery 36
- Third Courier 36
- Three Stooges 31
- Thud Ridge 34
- New! Thunder Strike 36
- Time & Magik 31
- Tin Tin on the Moon 36
- Titan 31
- New! To the Rhine 36
- Tom & Jerry 2 28
- Tom & Jerry 23
- Transputer 24
- New! Treasure Trap 29
- Triad 36
- Triple X 29
- Trivia Pursuit 29
- New! Turrican 29
- Twilight Zone 29
- New! Typhoon Thompson 28
- Ultima III 29
- Ultima IV 39
- Under Sea Commando 34
- Universe III 35
- Vampire's Empire 17
- ● Vette ....Call
- Vigilante 29
- New! Vindex 24
- Virus 21
- Vortex 29
- Vulcan 29
- War In Middle Earth 35
- Warhead 36
- Warlock 28
- Wayne Gretzky Hockey 34
- New! Web of Terror 32
- Welltris 29
- Where Sleeping Gods Lie ...36
- White Death 39
- New! Wild Streets 33
- Wings of Fury 27
- WindWalker 31
- World Championship Boxing 31
- World Class Course Disk 15
- World Class Leader Brd 29
- World of Flight 109
- World Snooker Billiards 22
- World Trophy Soccer 28
- Xenon II 39
- Xenophobe 36
- Zany Golf 19
- Zero Gravity 21
- Zoom 20

EDUCATION

- Adv. of Sinbad 35
- Aesop's Fable (Unicorn) 33
- Aesop's Fable (Hilton) 19
- New! Algebrain 66
- All About America 42
- New! American Idiomatic English 27
- Animal Kingdom 35
- Arabian Nights 35
- At The Zoo 31
- Barney Bear ....Call
- New! Barney Bear 2 28
- Cardiac Arrest 49
- Chicken Little 19
- New! CLAS 99
- ConSoundTration 30
- Deluxe Help ....Call
- Designasaurus 34
- Dinosaurs Are Forever 29
- Discovery Data Disks 15
- Discovery Math 25
- Discovery Spell 25
- Distant Suns 51
- New! Easy Grade 47
- First Letters and Words 29
- First Shapes 29
- Fraction Action 33
- Grade Manager 69
- Intellitype 19
- Jigsaw 29
- New! Katie's Farm 31
- Kinderama 33
- Learning Curve 55
- Linkword Languages 24
- Little Red Hen 19
- Logic Master 36
- Magical Myths 36
- Match It 29
- New! Math Blaster Plus 36
- Math Wizard 35
- Mathamation 59
- New! McGee 29
- Nutri Fax 43
- Opposites Attract 31
- Read & Rhyme 33
- Read-A-Rama 33
- Recipe Fax 28
- Talking Storybook (each) ...24
- Three Bears 22
- Three Little Pigs 19
- Trip (w/Atlas) 35
- Ugly Duckling 22
- Where in Europe 35
- Where In The USA 35
- Where In The World 30
- Word Master 35

DATABASE

- DB Man V 199
- DataRetrieve 59
- DataRetrieve Prof. 189
- New! Mail Shot Plus 73
- Mailodex 35
- Micro Base 25
- Microfiche Filer Plus 115
- Nag Plus 54
- Superbase Personal II 99
- Superbase Prof. 3 229
- Who What Where When 67

PROGRAMMING

- A/C Basic (v1.3) 134
- A/C Fortran 199
- Addison Wesley Manuals .Call
- Amiga Machine Lang 24
- ARexx 36
- AssemPro 72
- Aztec C-Dev (New Ver!) ..199
- Benchmark C Library 71
- Benchmark IFF Library 71
- Benchmark Modula-2 134
- Benchmark Simplified 71
- C++ 279
- C 5.0 199
- CAPE 68K 65
- DevPac Amiga 67
- DSM Disassembler 44
- HiSoft Basic 115
- InovaTools (New Version) ..57
- J-Forth 145
- L Debug 76
- Magellan (New Version) ...129
- Modula 2 179
- Module 2 Debugger 88
- Power Windows 2.5 63
- Software From Hell 56
- Source Level Debugger 82
- W-Shell 36

MUSIC

- AMAS 135
- ● Amiga Sings 12
- Audio Master 2.0 63
- Bars & Pipes 199
- Bars & Pipes Music Box 45
- Bars & Pipes Internals Sound Kit 45
- Bars & Pipes Rules for Tools 45
- Copyist Pro 149
- Dr T. Patch Editors ....Call
- Drum Studio 35
- Dynamic Drums 59
- Dynamic Studio 144
- Fat Sounds 46
- Fun Keys 28
- KCS 177
- New! KCS Level 2 Version 3.0 ...Call
- M 149
- MasterSound 54
- Master Tracks Pro 259
- MIDI Quest 179
- MIDI Recording Studio 49
- MidiMagic 98
- Music Mouse 49
- Music X 165
- New! Performance 129
- Pro Sound Designer 109
- Quasar Sound 37
- Sonix 49
- Sound Oasis 72
- Sound Trax 1 or 2 15
- Soundquest Patch Editors 100
- Studio Magic 75
- Synthia 2 89
- Synthia Professional 280
- Texture 102
- New! Trax 77
- New! Wave 189

UTILITIES

- AMAX 129
- New! AMAX 2 149
- Ami..Alignment 37
- New! AmigaDOS HyperHelp 29
- Amiga DOS Toolbox 40
- Amiga Tricks & Tips 17
- AmiKit 29
- BAD 34
- New! CAL (Calendar Maker)! 36
- Can Do! 99
- CLImate 25
- Color Commander 21
- Cross DOS 4.0 29
- Disk 2 Disk (New Version) .37
- Disk Mechanic 60
- DiskMaster 40
- Dos 2 Dos 37
- Doug's Library Disk 11
- New! Doug's Library #2 19
- New! Doug's Library #3 19
- Doug's Math Aquarium 59
- D.U.D.E. 35
- Dunlap Utilities 55
- Express Copy 31
- EZ Backup 36
- Fat Tracks 39
- Family Tree 34
- New! FRED (Phome Dialer) 36
- Home Inv Manager 27
- New! Lottery Professional 31
- Mac To Dos 92
- New! Mastering CLI (New Ver) 31
- MicroLawyer 42
- Momentum Check 25
- Norgen Geneology 71
- Palette Printer 25
- PixelScript 104
- Project D (New Version) 37
- Quarterback 45
- Raw Copy (Latest!) 37
- New! Reaper 36
- SuperBack 54
- Tarot Master 21
- Thinker 49
- New! Total Control Diet 74
- Virus Infection Protection ..32
- Virus Protection Toolkit 39
- Vo Rec One 129
- X-Copy II 28

Our objective is to carry every product for the Amiga – and sell them at the best prices. Our policy is to be as competitive as possible on all product prices. If you find a lower price, please give us a call. It is no longer close to possible for us to list all the products we carry. If you don't see it listed, please call.

- **New! Products are new and in stock.**
- **● Products had not been released at press time.**
- **▼ Products have been marked down in price.**

All other products are normally in stock (plus 100s more)!

WE ARE HOLIDAY HEADQUARTERS!

GVP GREAT VALLEY PRODUCTS — Specials!

New Products:

- 68030, 28MHz: $654.00
- 68030, 28MHz w/ '882 + 4MB: $1,469.00

CLassics

- 68030, 28MHz w/ '882 + 4MB: $1,469.00
- 68030, 33MHz w/ '882 + 4MB: $1,679.00
- 68030, 50MHz w/ '882 + 4MB: $2,549.00

We will not be undersold on GVP products!

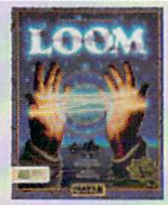
Series II Controllers Now In Stock

BASE Board

4 Megabyte Memory Board for the Amiga A500 by EXPANSION SYSTEMS

- Battery-backed clock
- Easy plug-in installation
- 6MB Upgrade Now Available

BaseBoard 0K $119.00
512K $151.00 4MB $375.00



Loom

Magical Action from Lucasfilm!

$43.00



Pool Of Radiance

At Long Last, It's Here!

$36.00

ELECTRONIC ARTS

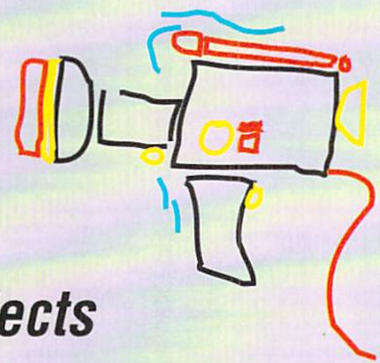
688 Attack Sub $35
Action Fighter 31
Afterburner 36
Air Combat USA 31
Alien Syndrome 31
Altered Beast 35
Aquanaut 29
Balance of Power 1990 .36
Battle Command 36
Battlehawks 1942 35
Billy The Kid 31
Blockout 29
Blood Relations 36
Blue Max 36
Brain Blaster 31
Buck Rogers 36
Budokan 29
Champions of Krynn 35
Colony 36
Crackdown 36
Cribbage King/Gin King .29
Curse of the Azure Bonds 35
Cyber Medix 31
Dark Castle 33
Days of Thunder 36
Death Bringer 29
Deluxe Music 63
Deluxe Paint III 99
Deluxe Photolab 99
Deluxe Print II 55
Deluxe Video III 99
Dinosaur Discovery Kit .29
DRAGON Force 35
Dragon Lord 36
Dragons of Flame 29
DragonStrike 35
Empire 35
Earl Weaver
  1988 Stats 15
  1989 Stats 15
  Basbeball 35
  Commisioner's Disk ...15
F/16 Combat 35
F/A 18 Interceptor 35
F-29 Retallator 36
Federation 35
Ferrari Formula 1 35
Flood 31
Fool's Errand 36
Golden Axe 36
Harley Davidson 36
Harpoon 43
Hillsfar 35
Hound of Shadow 29
Hunt For Red October ...22
Immortal 36
Imperium 29
Indiana Jones
  Action Game 29
  Graphic Adventure 35
Indianapolis 500 36
Iron Lord 29
It Came From The
  Desert 35
It Came II - Antheads ...16
Keef The Thief 35
Kid Talk 29
Kristal 35
Life and Death 35
Loom 43
Loopz 29
Lords of the Rising Sun 35
Lost Patrol 36
Magic Fly 31
Maniac Mansion 33
Math Talk 29
Math Talk Fractions 29
Mavis Beacon 35
Might & Magic II 43
Myth 36
Night Breed 31
Night Shift 31
Nuclear War 35
Pipe Dream 29
Pool Of Radiance 35
Populous 34
Powerdrome 35
Power Monger 35
Pro Tennis Tour 29
Puffy's Saga 23
Puzzle Gallery II 36
Puzzle Storybook 29
Rhyming Notebook 29
Rocket Ranger/Stooges 36
Sands of Fire 36
Second Front 35
Shinobi 36
Space Harrier 36
Speedball 29
Speller Bee 29
Starflight 35
Street Rod 31
Superbike Simulator 35
Sword of Aragon 29
Swords of Twilight 35
Their Finest Hour 43
Thunder Blade 36
Tunnels of Armageddon 29
Turbo Out Run 35
TV Sports Football 35
TV Sports Hoops 35
Unreal 35
Untouchables 31
Vegas Gambler 29
Waterloo 42
Wings 35
Yeager AFT 2.0 31
Zak McKracken 33

Titles in Green are New. Titles in Red have not been released but are expected in 1990. Titles in Black are available now!

Free Photolab with Deluxe Video III $95

We Know Video!

- Titles
- Editing
- Animation
- Overlay
- Special Effects



Call or write for our **free** Video-Maker brochure.

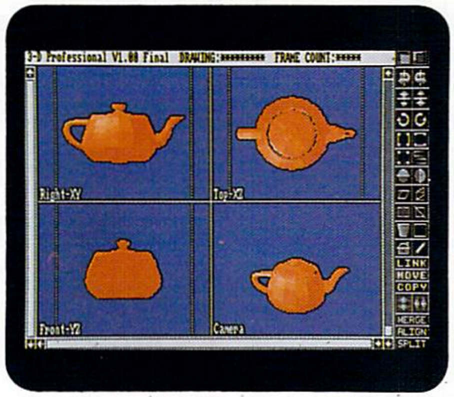
We are authorized dealers for Panasonic Industrial Video and Future Video Edit Controllers.

From p. 22
tower over Amiga dealers' shelves—like a dark horse in the 3-D race.

Developed by Cryogenic Software, 3D Professional is published by Progressive Peripherals & Software. Inside its immense box are three manuals, a tutorial videotape, and six disks of software and data that include 68000 and floating-point versions of the program, object and image data, and the Animation Station program (which is also available separately from Progressive).

3D Pro boasts an impressive list of features. Among these are multiple graphics formats (including 24-bit color output and eight-bit gray scale); variable screen sizes; support of MicroIllusions' Transport Controller for single-frame video recording; an ARexx-compatible scripting language; texture mapping; automatic text extrusion; fractal landscapes and trees; lathing; extrusion; 3-D conversions of bitmapped graphics; key-frame animation; and use of 2-D IFF images as foregrounds and backgrounds. The rendering modes do not include ray tracing, so real shadows and reflections are not possible. There are ways to fake them, however, and a convincing argument against ray tracing is that it takes so much time.

The program can import 3-D objects in a wide variety of formats, though all color and surface characteristics may not survive the translation. It can save objects in Videoscape format as well as its own file format. It outputs graphics files



Tea for 3-D—Pro style

as IFF, except for the IFF 24-bit format; you can save 24-bit files in the same RGB format that Sculpt-Animate 4D and Mimetics' Frame Buffer use.

In up to Your Ankles

The program's interface is wholly mouse-based except in scripting, and its screen has a large selection of icon-based tools. It's obvious that a tremendous amount of development time went into the interface, which is consistent and workable. If you have never used 3-D software before, you may find it easy to get your feet wet with 3D Pro. Unfortunately, though, the water is not very deep.

On starting the program, a requester asks you to specify values to determine the number of objects, vertices, and other elements that define a scene. If you specify too few of these values, 3D Pro will eventually refuse to let you add, modify, or load objects. I found the only realistic way to deal with this was to use very high values to avoid ever running out of available space. The result was that I used virtually all of the memory in my seven-megabyte system.

Memory is taken up even before you create any objects in a scene. This is a good example of the type of housekeeping that software should take care of behind the scenes. The fact that you cannot alter these values without destroying all data in memory makes the program very awkward.

3D Pro is a point-and-polygon system in which it's not possible to move or even select points except in the lathing and extrusion modules. Objects are either constructed from primitives (cubes, spheres, and so on), or are created in those special modules—from within which you cannot see other related objects you are working with.

Because of the nature of 3D Pro's solid modelling, objects sometimes appear to poke through other objects when they shouldn't. In such cases, you must manually split the offending objects up into individual pieces. There is no Undo function in any part of the program.

Update to the Rescue?

Although the program contains many interesting features, they are frequently implemented in an awkward fashion. For example, the several textures available are referenced to the world's origin rather than to the origin points of the individual objects. This means that if a textured object should move in the course of an animation, the appearance of its texture will actually change. Texture-mapped objects are therefore impractical to move, making texture mapping a feature of questionable value.

You can turn IFF bitmapped images into 3-D objects, but the program creates them as flat mosaics, in which the indi-

Continued on p. 98

YOUR TURN!

3D Professional has the best documentation of any of the 3-D modeling programs. It is the only program I've ever bought that does not require you to read the manual. The instructional videotape is a good idea; it's well done, and it's a good supplement to the manual.

The program is friendly and very powerful. It falls somewhere between Caligari, which is tremendously powerful but very expensive, and Silver, which is less powerful but affordable. I feel it is slightly overpriced, though; I would like to see it in the $200–300 range.

3D Pro is not great for object creation, but it is fine for texturing, lighting, and rendering imported objects. I appreciate the fact that the program supports Videoscape and Sculpt formats. The only thing I wish for is support for 3-D stereo vision; a Read_Me file in Animation Station hints at this. 3D Pro does so well in handling standard 3-D; I wish it would go the extra step.

John Semper
Toluca Lake, CA

YOUR TURN!

3D Professional is a wonderful program. Its intuitive interface and pull-down menus make it easy to use. I like it better than either Sculpt or Turbo Silver; the learning curve is not as great. I also like its expansivity, which allows for ray tracing, custom displays, and so on.

Progressive provides wonderful support. The videotape is a big benefit, too, but with the wealth of manuals included, a three-ring binder would be helpful.

Mike Lamb
Pueblo, CO

IN 1972, AN ELITE AIR CORPS FLEW OVER VIETNAM. FLY WITH THE BRAVE AND THE BOLD.

Feel the adrenaline kick in as you scream down the carrier runway. You're up! And so is your squadron of F-4's. Now nothing can stop you —except the deadly fire from those MiG 21's, SAMs and anti-aircraft flak.

Experience the raw emotion and harrowing danger of intense air combat over North Vietnam in this simulation based on Stephen Coonts' best-selling novel, *Flight of the Intruder*. Authenticated by Vietnam pilots who flew in the Linebacker Campaign of 1972, you won't find any other simulation so like the real thing.


Off you go to adventure, danger and excitement.


Zero in on the MiG, before he zeros in on you.

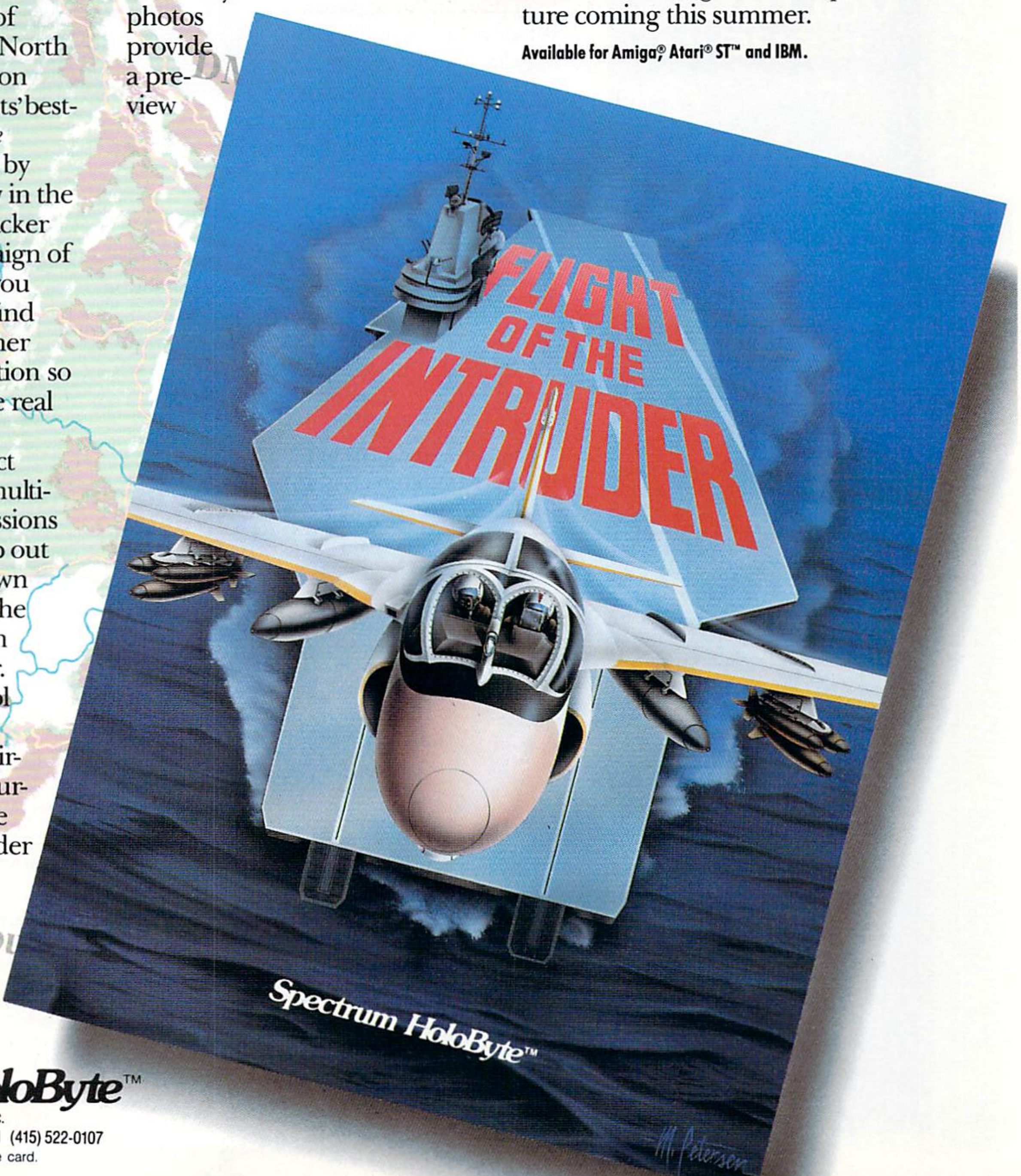

Mission accomplished! Now back to Yankee Station to plan your next attack.

Select from multiple missions or map out your own using the mission creator. Control up to eight aircraft during one mission (four A-6 Intruder bombers and four F-4 Phantom fighter interceptors.) Switch from the A-6 to F-4 cockpit anytime.

Thirty-four different targets provide new challenges every time you take to the sky. Aerial photos provide a preview of the target zones. For continuous challenges, choose from 16 variables to determine the level of difficulty. Get Flight of the Intruder™ now and watch for the full-length motion picture coming this summer.

FREE FLIGHT OF THE INTRUDER PAPERBACK NOVEL INCLUDED

Available for Amiga®, Atari® ST™ and IBM.



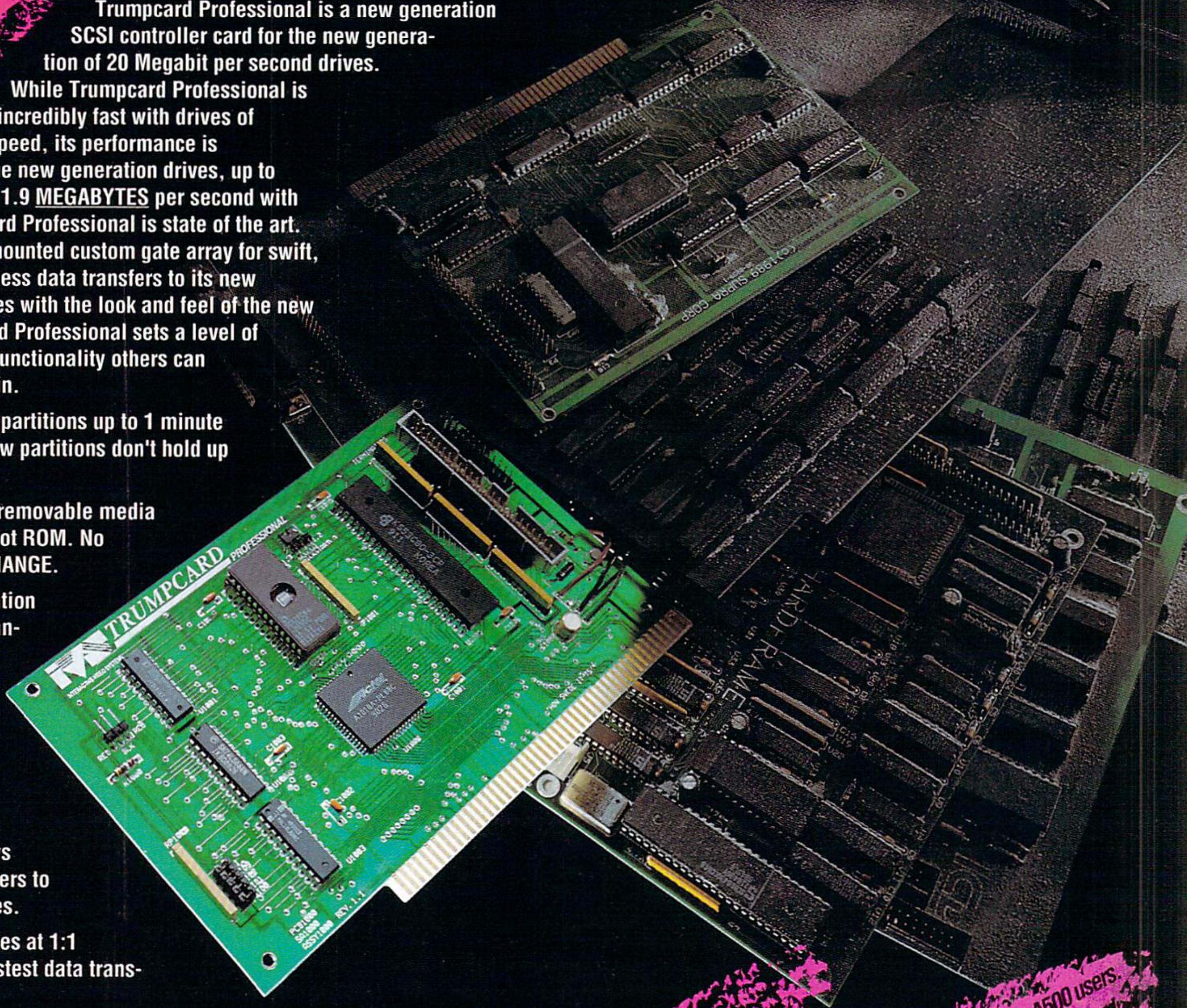
Spectrum HoloByte™
A Division of Sphere, Inc.
2061 Challenger Dr., Alameda, CA 94501 (415) 522-0107
Circle 315 on Reader Service card.

Trumpcard Professional...
the Frontrunner in SCSI disk controllers

NEW!

State of the art users deserve state of the art hardware

Trumpcard Professional is a new generation SCSI controller card for the new generation of 20 Megabit per second drives. While Trumpcard Professional is incredibly fast with drives of any speed, its performance is unmatched with the new generation drives, up to an unprecedented 1.9 MEGABYTES per second with DPERF2! Trumpcard Professional is state of the art. From its surface mounted custom gate array for swift, smooth and seamless data transfers to its new TC-TILS 2.0 utilities with the look and feel of the new WB 2.0, Trumpcard Professional sets a level of performance and functionality others can only aspire to attain.



- Auto mounts all partitions up to 1 minute after RESET, slow partitions don't hold up autoboot.
- Full support for removable media built into autoboot ROM. No need for DISKCHANGE.
- Full implementation of RDB's and standard Direct SCSI interface.
- User selectable Trumpcard SCSI ID for SCSI bus arbitration allows multiple computers to share hard drives.
- Supports all drives at 1:1 interleave for fastest data transfers possible.
- Full Mac emulator support.
- 1 year warranty on parts and labor.

Naturally, Trumpcard and Trumpcard 500 owners can upgrade with IVS' *Trumpcard plus $100* upgrade policy. Call IVS for details. Upgrade available from factory only.

Trumpcard 500 Professional is available for A500 users.
NEW!
Lower Price on Standard Trumpcard!
$169.95

Trumpcard Professional List Price: $279.95

TRUMPCARD PROFESSIONAL

INTERACTIVE VIDEO SYSTEMS • 7245 Garden Grove Blvd., Suite E • Garden Grove, CA 92641 • Voice: (714) 890-7040 • Fax: (714) 898-0858

Circle 54 on Reader Service card.

From p. 94
vidual pixels of the bitmap become separate objects. Even low-resolution pictures convert into very complicated 3-D objects when you use this technique. In addition, there's no way to wrap a flat image onto a 3-D object.

Although you would expect this type of solid modelling to render as fast as Videoscape, or at least as fast as the solid-model modes of Sculpt and Silver, that does not seem to be the case. Rendering is painfully slow, even on a 68030-based system, though it is still faster than ray tracing. The quality of the HAM images is not very good, and the rendering routine performs no anti-aliasing, so HAM images show stair-stepped jagged edges and HAM fringing. Better HAM images would result from rendering in 24-bit color and using another program—ASDG's The Art Department, for instance—to convert those images to HAM. That, however, doesn't help the lack of anti-aliasing.

Some of these problems (space does not permit a blow-by-blow accounting of all 3D Pro's failings) may be addressed by software updates; the basic structure of the program suggests better things to come. In fact, point editing is one example that the author mentions as a future enhancement.

Reaching Out

You can use an external program to render 3D Pro files, which presents a unique and interesting situation. Custom renderers can be created (Cryogenic is currently working on a ray-tracing module); and rendering across networks is a possibility. That means that 3D Pro, running on a networked Amiga, could potentially call a renderer on some other computer on the network and do all the computation on another system.

The ARexx support in the scripting language is very welcome, and makes it possible for ARexx programmers to construct some sophisticated animation functions to work from within 3D Pro.

The fractal object-creation tools are also interesting, even if the trees are not particularly treelike. The author does mention future possibilities for fractalizing objects, which sounds intriguing.

If you currently use another 3-D program, you're unlikely to want to jump ship for 3D Professional. Despite its range of features, it is far from being the first release of the new generation of 3-D software. It's much more like the final release in the last generation.

On the other hand, if you're just about to begin working in 3-D graphics, you might want to look at 3D Pro. The author's obvious commitment to the product indicates that we can look forward to improvements, and you may decide that you want to sign on for that ride. At the moment, though, the ride looks rather long and rocky for the inexperienced, and the destination a bit uninspiring for the serious traveller.

3D Professional
Progressive Peripherals & Software
464 Kalamath St.
Denver, CO 80204
303/825-4144
$499.95
One megabyte required.

MIDI Quest

Total synth support

By Steve Quinzi

FOR THE PAST few years, musicians have relied on software editors and librarians to compensate for two major deficiencies of the typical MIDI synthesizer, namely, low on-board sound storage and cumbersome voice programming. With MIDI setups growing larger (a pro's rig typically consists of a dozen or so modules), the concept of a single software package to manage the patches for all of your synths makes a lot more sense than the single-device approach we are accustomed to.

MIDI Quest, the new universal patch editor/librarian from Sound Quest, can store and edit patch data for all MIDI devices, including most current synths, that support system-exclusive (sys-ex) communication. You can group together any number of patch or sys-ex files in a single database and send it out to the various devices simultaneously.

MIDI in Manifold Form

Because MIDI Quest is designed for use with external MIDI hardware, you need a MIDI interface and at least one MIDI synthesizer or module to use it. For effective use with a setup of multiple MIDI devices, you should also have a MIDI patcher that responds to program changes.

The noncopy-protected software comes on two disks. One holds the program itself. The other contains drivers that allow communication with specific MIDI devices. Table 1 shows, in alphabetical order by manufacturer, a list of the machines for which MIDI Quest provides drivers. The more contemporary of these devices are also supported by editing templates—graphic editing pages for changing synth parameters—that are also on the second disk. To fit all these drivers and templates on a single disk, Sound Quest uses a compressed format. Using MIDI Quest's Install utility, you can decompress the files you want and copy them to another disk, which must be named Drivers. The install routine also creates a default setup file.

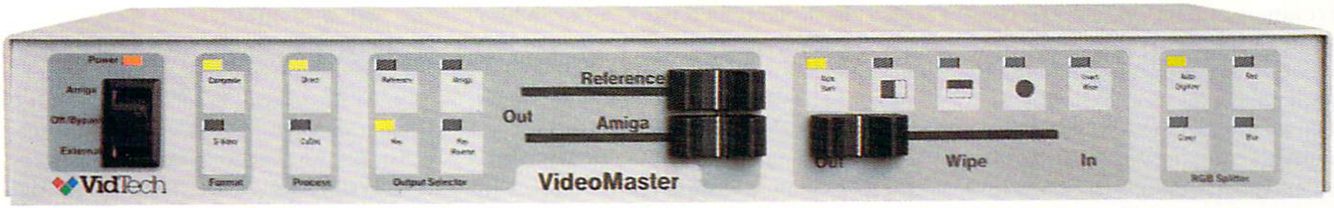
Setting Up Your Gear

MIDI Quest opens with a Driver List window displaying all the drivers and ►

Table 1. Machines supported by MIDI Quest drivers.

Casio: CZ101, 1000, 3000, 5000 and VZ1
Digital Music Services: MX-8
Digitech: DSP128
Emu: Proteus
Ensoniq: ESQ-1, ESQ-M, and SQ-80
Kawai: K1, K3, and K4
Korg: DS-8, DW 6000, DW8000, EX8000, M1, M1R, M3R, and the T-series machines
Lexicon: LXP-1
Oberheim: Matrix 6, 6R, and 1000
Roland: D-5, D-10, D-20, D-50, D-110, E-20, GR-50, JX-8P, MT-32, U-20, and U-220
Sequential Circuits: Drumtracks, MultiTrack, Six-Track, Prophet 5, 10, 600, and T8
Yamaha: DMP7, RX11, RX17, RX21L, RX7, V50, TX81Z, DX7, 5, 11, 21, 27, 100, 7IID, 7IIFD, TX7, TF01, TX802, FB01, and SPX90

VideoMaster
The Integrated Desktop Video System For Amiga Computers



VideoMaster integrates in a single system all the functions necessary to transform the Amiga computer into a fully featured multimedia workstation without using the video slot. VideoMaster performs the following functions:

- ◆ Genlocks the Amiga graphics to incoming composite (PAL or NTSC) or S-Video source (S-VHS, Hi8 or ED-BETA).
- ◆ The genlocked video production is available in composite and S-Video formats as well as RGB for optimum graphics.
- ◆ A built-in RGB splitter provides for direct connection to a digitizer including a compatible interface to Digi-View Gold 4.0.
- ◆ A special effects generator produces horizontal, vertical, circle and inverted wipes–automatically timed or manually controlled.

COMPOSITE RGB S-VIDEO



Two Models
NTSC (RS-170A) and S-Video
PAL and S-Video 625

The S-Video, Y/C signal is processed independently in, through and out.

"Glitch Free" Switches
Cut to any Amiga/Reference video combination in the next frame of your recording with no flicker or artifacts.

Dissolve Control Bars
Dissolve to any Amiga/Reference Video combination. Also dissolve to black.

Wipe Switches and Control Bar
Vertical, horizontal and circle wipes timed by VideoMaster or controlled manually. Inverted or combined multiple wipes for special and unusual effects.

Digitize External Images
Connect your Digi-View Gold 4.0 digitizer, set RGB splitter to Auto and VideoMaster will synchronize the digitizer to R, G and B signals. Under manual control, select RGB sequence and interface to most commercially available digitizers-no B & W camera with color-wheel required.

The S-VIDEO GENLOCK for all Amigas A-500/A-1000/A-2000/A-2500/A-3000

RGB Processor
VideoMaster generates RGB video and graphics for direct connection to an RGB monitor or projector. The standard Amiga monitor can display reference video and Amiga graphics optimally in RGB mode.

Transcoding
Create composite productions from S-Video reference source. Create S-Video productions from composite reference video. VideoMaster output is continuously available in all three formats. (Composite, S-Video, and RGB).

Record with No Reference Video In
No problem! VideoMaster generates internal sync to allow the Amiga artist to record his animation in either composite or S-Video.

Amiga RGB Session
No recabling! Set VideoMaster to Off/Bypass and develop RGB graphics for your next production.

Key Out
Compatible with the video mixer in your studio ensemble.

Leave your Amiga Video Slot Open
For use with other video add-on cards that add sizzle to your productions.

External Power Supply
Required for A-500. Optional for all other Amigas.

Dealer Demonstration Program
Video dealers should contact VidTech for details.

Warranty and Support
VideoMaster comes with a full year warranty and 800 number for customer service and support.

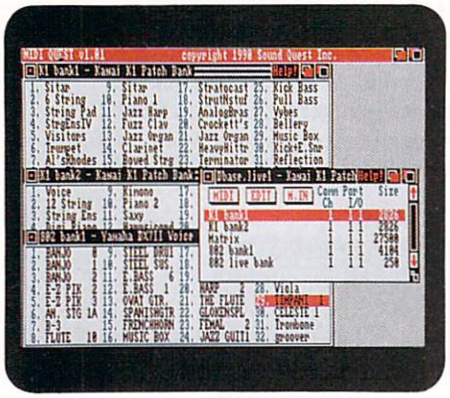
Call or write us today:

VidTech International, Inc.
2822 NW 79th Avenue
Miami, Florida 33122
800-727-2261 or 305-477-2228
Fax 305-591-1651
Price: $1295
Dealer inquiries invited.

VidTech

Circle 170 on Reader Service card.

templates you have installed. If you use different combinations of MIDI devices, you can create multiple setup files. To the right of each driver in the window are six columns of data that govern communication with the corresponding MIDI device: Communication Channel (commonly known as device number), MIDI Channel, Port I/O (the serial port is currently the only possible setting on the Amiga), Patch Number (specifies individual patch location and, in some synths, differentiates between patch banks), and Control Number. The last field applies only if you have a MIDI patcher. It contains the program change number that is sent to the patcher to route the MIDI signal to and from the appropriate device when a particular driver is selected. Making use of this field requires some setup work on the patcher, but it is well worth it.



Patch banks in the database window.

If all is set up correctly, selecting a patch-bank driver from the driver list and clicking on the Edit button will cause the patch bank to appear on the screen. By holding the Shift key down and clicking with the mouse, you can select all of the drivers in the list; MIDI Quest will ask for a data dump of the corresponding MIDI devices and display them on screen one at a time. If you click the Disk button instead of the Edit button and follow the same procedure, the program saves the data disk. Likewise, if you click the DBase button, the program transfers the data to a Data Base window.

All the Way to the Banks—And Patches

There are two types of editing available—bank and patch. Bank editing lets you manipulate the makeup of patch banks in a typical librarian environment. You can audition any patch by clicking on a patch name in a bank. You can also copy patches or groups of patches to different locations in the bank or even between banks of the same device. The order of a selected group of patches can be inverted or shifted up or down. Also, three random patch-generation features are available: Mix combines parameters of two patches to produce a new bank; Mix All combines large parts of data from two patches; and Blend takes data from a selected group of patches to arrive at a new bank. If you do not like the results, you can restore any bank to its original state.

Selecting one patch driver and clicking on the Edit button causes a single patch-editing template to appear—if you have installed a template for that data type. Although the templates vary by device, all of them have (where applicable) graphic displays of envelope shapes, sliders, gadgets, and alphanumeric data arranged in a logical fashion. You edit by dragging with the mouse. The templates are larger than a single screen, but you can get to all the parameters by using the scroll bars at the bottom and side of the screen.

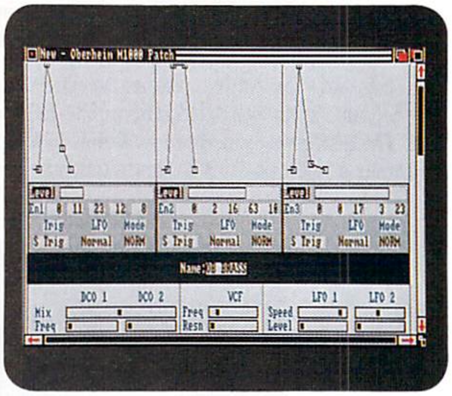
The Single Edit menu offers some time savers. Copy and Paste can copy a group of parameters in one patch to the same location in another. Forced Fill is supposed to copy parameters within a patch, but I found it to be very inconsistent. Randomize produces random variations in a selected group of parameters.

YOUR TURN!

MIDI Quest is a breeze to install. It does exactly what it promises, and the database function is excellent. It employs the Amiga's features well. Moving about the program is not always intuitive, however, and I would appreciate being able to start from scratch with an edit template. Also, you cannot go from some bench editors to the voice editor. All in all, MIDI Quest is fantastic—one of the best MIDI packages for the Amiga.

Bill Thompson
Womelsdorf, PA

I found that it is best to work on one patch at a time, because the program really slows down when two or more editing templates are active. If you come up with a sound that you want to keep working on, you can save it temporarily in one of four buffer locations. After you've made additional changes, you can save it to a new buffer location and compare the two versions. At any time, you can restore the entire patch to its original state, or do the same with a group of parameters.



The Oberheim Matrix-6 pattern-editing template.

Device Data

MIDI Quest's most prominent feature is its database capability. Select the appropriate drivers in the Driver List window and click on DBase, and you will have a database filled with information from all the synths on line. You can create a blank database by opening a new database window and selecting DBase from the Windows menu. A requester allows you to load disk files, but you can also load individual banks or single patches from disk, from MIDI, or by copying from other databases. You can exchange single patches between patch banks and databases through the Single Patch editor. Incidentally, the program's requesters are very frustrating. They provide neither change-volume buttons nor any way to interrupt the loading of a disk directory. Better requesters would definitely speed the program's operation.

Once you have assembled a database, you can sort the file in one of five ways: by instrument/type, file size, MIDI-reception time, or alphabetically by file name or manufacturer name.

MIDI Quest offers some interesting ►

PRESENTING THE MOST *DASHING* TRENDSETTER SINCE excellence!® 1.0



The first version of excellence! set the standards for power, features and ease of use in Amiga WYSIWYG (What You See Is What You Get) word processors. Now, excellence! v2.0 sets the standards again.

Whether you are a novice or novelist; student or professor; homemaker or executive, you'll enjoy the new, refined features an innovative pace-setter offers.

Excellence! has a personable and intuitive interface, allowing you to unlock its power in simple, understandable steps. Understandable also flourishes in the thorough reference manual that communicates with you in English, not some dialect of computerese.

What's new and better? First you'll notice the typing speed. It's fast! Excellence! zooms along as fast as you can type.* The Dictionary and Thesaurus are expanded with thousands of new words. Printing is extensively refined and features Mixed-Mode Printing to combine printer fonts with graphics. File and path names are longer allowing you to take advantage of hard drives. Excellence! now saves User Defined Defaults, so you start a document writing creatively, instead of mechanically changing margins. Now, that's better!

What's new? Virtual Memory Management permits document lengths limited only by disk space. The Thesaurus displays definitions to help you find the meaning you want. Leading values can be input directly so you can quickly change to double spacing. Alternate characters elegantly insert into text. You'll find easy-to-use Hard Drive Installation and Dictionary Maintenance utilities included for your convenience.

These are only a few of the many new features and improvements available in excellence! v2.0. So, we present to you a superb product, for your ever changing needs. From Micro-Systems Software, the leader in Amiga productivity applications.

Your favorite software just keeps getting better!

Technical Specifications

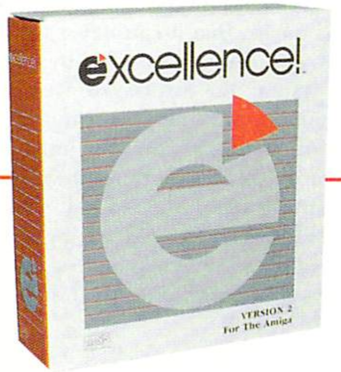
PRINTING
- **100% Color PostScript support**
- 4 types of printer output, special HP support
- **Internal printer font support**
- **Mail Merge**
- Preferences printer driver compatible
- **Mixed mode printing**
- Landscape printing

GRAPHICS
- **Mix pictures with text in paragraph**
- Graphics in headers, footers or footnotes
- **WYSIWYG** editing
- **Picture scaling and cropping**

ACCESSORIES
- **140 thousand word Dictionary** with legal, medical, technical, scientific, geographical, and biographical supplements
- **1.4 million word Thesaurus** (with definitions)
- **Spell-as-you-type**
- **Grammar and Style checker**
- Bullet proof **Hyphenation**
- **Glossary** with Macro key support
- **Macros** can be assigned to almost any key
- **Math**
- **Index and Tables of Content generation**

FORMATTING
- Mouse and keyboard support
- **Multiple newspaper-stylecolumns (1-4)**
- Left, Justified, Centered & Flush paragraph
- Left, Justified, Centered & Decimal tabs
- **Multiple headers, footers and footnotes** (odd and even headers and footers)
- Global font and style substitutions
- Page and Ruler settings stored in document
- **User defined Page Setup and Print defaults**
- Display current date and time in document
- Numbered footnotes

OTHER FEATURES
- **Typing speed exceeds 170 words per minute**
- IFF and ASCII file import
- **Free Technical Support for registered users**
- Clipboard support
- **Not copy protected**
- Undo typing
- **Hard drive install utility**
- Project icon support
- **Up to 250 fonts in a single document**
- Support for Interlaced windows
- **Virtual memory manager**
- 2, 4, or 8 color windows and color printing
- **Long path name support**
- Insert any standard character
- Low, medium & high resolution IFF support



Committed to excellence since 1978

*up to 175 words per minute

Micro-Systems Software
12798 Forest Hill Boulevard, Suite 202
West Palm Beach, Florida 33414
407-790-0770 FAX 407-790-1341

Dealers and Distributors Call 1-800-327-8724
See your local dealer for a demonstration.

Circle 95 on Reader Service card.

ways to check sounds and data. From the MIDI controller window, you can generate any type of MIDI information using the mouse. The Sequence Player can play any Standard MIDI File (SMF) format-0 sequence, but I wish it supported format-1 SMF sequences as well. You can store up to ten sequences at a time, and buttons numbered 1 through 10 specify which sequence is to be played. Play, Stop, and Loop buttons control the playback, while a bar/beat/tick display shows you your location in the sequence.

You can change the tempo of the MIDI file, and a group of 16 buttons below allows you to mute any MIDI channel. The benefit of having such features on an editor/librarian program is that while the sequence plays, you can change sounds from the bank window or do single-patch editing from a template, and hear the changes in real time.

The MIDI Monitor window can display either MIDI data generated by the Sequence Player or that coming in from an outside source. Note data appears on a grid wherein the horizontal represents MIDI notes, and the vertical represents MIDI channels. Controller, velocity, aftertouch, pitch bend, program change and sys-ex data are also displayed. The Amiga-M key sequence toggles between graphic and text displays of data.

A Macro on the Line

MIDI Quest offers two very advanced features. One is a facility for creating drivers for any MIDI devices not supported by the program as packaged. For this purpose, the program provides its own macro language and a window into which you plug MIDI-implementation information. The other advanced feature is a utility for converting patch files in the format of another manufacturer into Sound Quest format. Like the Driver Creator, the File Conversion utility requires you to write a macro—using the macro language—to convert one file format to another.

Both of these features were designed for those who are thoroughly versed in system-exclusive, fluent in hex, and very patient. Those who are not can log on to Sound Quest's electronic bulletin-board system to see if a suitable macro has already been written. If you cannot find the macro you need, just upload the file that you want to convert. Log on again in a few days, and you will find a macro to do the job.

MIDI Quest is a great and comprehensive program. I would be happy with just its database aspects, but the extra features make it that much more appealing. It is easy to learn, thanks to the online help and the Fast Tips menu selections, which offer pointers on using most aspects of the program. The documentation is good, although an Amiga-specific manual would be preferable to sifting through references to the PC, Mac, and Atari versions of MIDI Quest.

Are you wondering whether to dump your single-machine editor/librarians in favor of MIDI Quest? My answer depends on your setup and expansion plans: If you have just one MIDI device, or if you find yourself doing a lot of patch editing on a particular device, I recommend you hold on to the editor you have. If, on the other hand, your MIDI setup is large or growing, MIDI Quest is your best bet. It's an invaluable tool for total-system management and a cost-effective way to support a lot of gear.

MIDI Quest
Sound Quest
1573 Eglington Ave. W.
Suite 200
Toronto, Ont.
Canada M6E 2G9
416/256-0466
800/387-8720
$250
One megabyte required.

Dr. Ami . .

Physician, heal thyself

By Sheldon Leemon

WHEN YOU HAVE a health problem, an early and accurate diagnosis puts you in the best possible position to deal with it. The same principle applies when various parts of your Amiga system are not performing properly. Dr. Ami . . (Free Spirit Software) attempts to perform as diagnostician and counselor, to help you recognize and deal with hardware problems. After using this package for a while, however, I have a much better understanding of why so many people are afraid of doctors.

Doc, I Seem To Be Losing My Memory

Dr. Ami. . actually consists of two separate programs. Memory Doctor is designed to test the memory chips on your computer's motherboard and RAM expanders. When you start the program, it displays the size and type of each block of memory in the system. You choose a block (sliders let you limit the area to a portion of a board) and the type of test you wish to perform—either Read Only, or the more thorough Read/Write test. A Drop option adds a delay to test memory refresh (a process by which dynamic RAM chips are constantly updated to ensure proper data retention).

As the test is performed, a bar chart shows you whether a block of memory is free or in use, and whether it passed the test or failed. By pressing the right mouse button, you can bring up a second screen showing a greatly enlarged version of this chart and a display designed to help you find the location of bad chips on your RAM board. The program also lets you send an error list to a printer or a disk file that you can use in conjunction with the included ConfigMem program to remove defective memory from the free-memory pool.

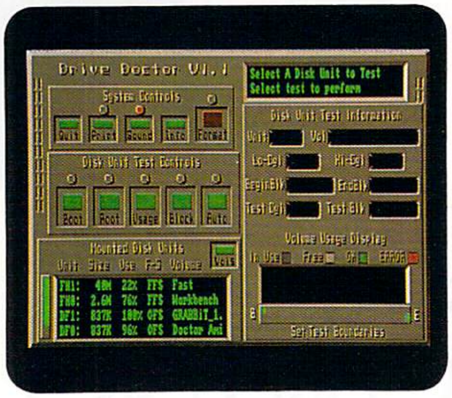
Incomplete Diagnosis

Even before running these tests, I had certain misgivings about Memory Doctor. For one thing, the program tests only one bank of memory at a time, and just once per test. Because some memory problems are intermittent in nature, or show up only after a certain period of time, only a test that can run continuously for several hours is apt to find tricky problems.

Another limitation of Memory Doctor is that it tests only free memory, and not memory that the system shows is in use. This means that it can never test the portions of RAM occupied by the operating system, the display, or even Memory Doctor itself. While it is true that nice programs don't ordinarily intrude on memory other programs are using, an exception should be made for diagnostics. Otherwise, it's like asking a doctor to examine a fully clothed patient. Finally, although the tests can take a fairly ►

long time, there is no way to stop in mid-stream.

With these limitations in mind, I proceeded to test the memory in my A2000. As expected, everything checked out fine. Because I wanted to test the program's error-reporting routines, however, I decided to manufacture a problem. I removed one of the chips from the middle of a Microbotics 8-Up! memory board, bent one of the legs out,



Drive, Doctor, drive!

and replaced the chip in the socket.

When I ran Memory Doctor again, it reported no memory errors on the board. To double check, I ran the memory-test program that Microbotics provides with its memory boards. Not only was the test much faster than Memory Doctor, but it spotted the error right off the bat.

I then bent out a different leg of the chip and called the Doctor back, this time using the program's most intensive mode, Read/Write with the Drop option. The results were the same. Finally, I removed the chip from the board altogether. Again, the Microbotics memory test had no problem spotting the trouble. Memory Doctor, however, went through the entire test showing no irregularities until it came to the end of the block of RAM, at which point the screen went blank and the program crashed. I never did get to check the error reporting.

Select a Device and Say "Ah"

Drive Doctor, the second program in the set, is designed to help you cope with errors on your floppy- and hard-disk drives. Its screen layout is similar to that of Memory Doctor. It displays all of the drive volumes, and once you have selected a device, you can perform one of several tests.

The Boot test checks the boot block and allows you to rewrite it. The Root test checks the validity of the root block and allows you to rebuild it, restoring deleted files (as long as nothing has been written over them). The Usage test validates the Block Allocation Table, which identifies those portions of the disk that are in use. Finally, the Block test scans each track, checking for physical errors. If it finds an error, and the problem block is not in use, the program marks it as used, so that the system will not try to access the bad portion. Drive Doctor can also format disks that have physical errors, mapping out any bad blocks.

As with the Memory Doctor, the Drive Doctor has some obvious limitations. First, it maps out bad blocks only if they are not in use. If it finds a bad block that is in use, it won't try to delete the file that is using it and mark all of that file's blocks as used—it just leaves the bad block alone. In addition, if it finds damage to the root block, it tries to rebuild it on the same media. When the problem is with the media itself, this effort is not only futile, but may actually impede later attempts to rescue the data. That's why most disk-salvage programs never write to the damaged disk, but rather copy files from it to another disk.

Out for a Test Drive

To test Drive Doctor, I copied the Dr. Ami . . disk to several blank floppies, some of which were good, some of which were damaged through use, and some of which I intentionally damaged. One of these disks, for example, would copy only to track 60. When the Workbench's Diskcopy program terminated early, it left the disk with a boot block that identified it as an incomplete copy. Drive Doctor correctly identified this as a nonstandard boot block (which it suggested might be due to a virus), and suggested that the block be rewritten. When this was done, most of the data could be recovered.

I then took one of the good copies of the disk and made a small pinhole near the last track. Although the Workbench accepted this disk, it would not let me copy files onto the bad section, and actually crashed when I tried to copy certain files. I used all of the Drive Doctor's tests on this disk, which passed all except the Block test. Because most of the bad blocks were already in use, however, the program did nothing to de-allocate them. As a result, the Drive Doctor left the disk in the same unusable state as it found it. Using Dave Haynie's public-domain program, Disksalv, however, I was able to recover as much of the disk as was left undamaged.



YOUR TURN!

I have not used Drive Doctor. I have used Memory Doctor many times, however, and have found that it does not work. I tested the software with a RAM board that I knew to be defective; Memory Doctor reported that the board was fine.

Free Spirit's customer service is poor. I have called the representatives for help, but they insist the program is fine. Free Spirit should take Dr. Ami . . off the market.

Gary Sullivan
Fremont, CA

For my next test, I placed a small magnet on the surface of one of the disks. The result was that when I inserted the disk in a drive, I got the system message "Error validating disk, Doctor Ami . . Disk is unreadable." Again, Disksalv was able to salvage most of the data, but Drive Doctor was relatively ineffective. The disk passed the Boot and Root tests, but failed the Usage test. Drive Doctor's attempts to restore the allocation table only made things worse. When I tried the Block test, I got the message "Must have valid Root Block," but when I tried the Root test again, the results were "Root Block is valid."

While trying a heavily damaged disk, I ran into another of the Doctor's quirks. With the Auto mode switched off, the program stopped at every bad sector. Because nearly all of them were bad, I would have had to click on a requester over a thousand times to complete the test. The program, however, offers no Cancel option to allow a graceful exit. I tried giving it a hint by taking the disk out, but that didn't seem to faze the Doctor: It just kept reporting each block as bad. Finally, after ►

GOLEM

Europe's Largest Amiga Developer







Golem Tower

Put your A2000 in the Golem Tower and clean up your desk! Fits all your external units, such as hard drives (up to 1 gigabyte), 2 3.5" floppy drives, 2 5.25" floppy drives, a tape streamer and much more.



Golem Drives

High quality Amiga floppy disk drives with a pass through buss, On/Off switch, dust proof casing, built in LED track display.

Track Display for the Amiga 2000 shows actual position of stepper and heads of both internal disk drives. There's no drop in disk speed or software required.



Golem SCSI II Controller

• State of the Art •
High performance SCSI controller with 16 Bit SCSI II bus system, DMA Free data transfer, up to 1.42 MB/sec transfer rate. Available as either an internal card for the A2000 series or in a external case for the A500 or A1000.

Golem, Inc. • 421 Hudson, M12 • New York, NY • 10014
Tel: (212) 727-0548 • Fax: (212) 627-3965

Circle 316 on Reader Service card.

YOUR TURN!

I have an A2000 with three hard drives, two hard-drive controllers, an accelerator, and seven megs of RAM. I have suffered chronic problems with hard-drive errors, SyQuest cartridge failure, and mysterious software crashes. The local service center has been unable to correct these problems. I was on the verge of selling my Amiga when I purchased Dr. Ami . ., hoping that it would help.

Memory Doctor not only located my memory problems (one intermittently bad RAM chip on my accelerator), but it also removes the defective memory on system bootup, so that I can continue to use my Amiga until the replacement chip is installed.

Drive Doctor was unable to tell me why I have hard-drive problems. It can, however, diagnose the cause of a hard-drive crash, recommend corrective action, and repair the drive. It was even able to format a SyQuest cartridge that previously would not format because of errors, and then remove the error sectors. This allowed me to continue using this otherwise useless $100 cartridge.

Dr. Ami . . has saved me hundreds of dollars and countless hours of frustration. If you own an Amiga, you should own this program.

Jeff Sells
Brunswick, ME

a frenzy of clicking, it let me out of the test. I tried formatting the disk to map out the bad blocks, and that seemed to work (the program had noted that 17 cylinders were mapped out). When I tried to fill the disk with files, however, I got a Read/Write error. Apparently the Doctor didn't catch them all.

Although I'm a firm believer in preventive medicine, I also think it's important to choose a doctor that you trust. After several sessions with Doctor Ami. ., I don't think that I'll be recommending his services to my friends.

Dr. Ami. .
Free Spirit Software
PO Box 128
Kutztown, PA 19530
215/683-5609
$49.95
No special requirements.

Migraph Hand Scanner and Touch-up

Scanning for just a little gold

By John Wolfskill

THERE ARE MANY expensive ways to transfer pictures, photos, and graphs from the printed page to your Amiga's memory: optical readers, digitizers, and flatbed page scanners, to name a few. For many applications, however, a hand scanner may be the most appropriate solution.

For those who can benefit from high-resolution monochrome or gray-scale images, Migraph, Inc. offers the Migraph Hand Scanner with Touch-Up software, a graphics package with a host of drawing and editing features. The $399 package includes a small, circuit-board cartridge that attaches to the serial port of the A500 or A2000 (its use with the A1000 requires an interface you can get for free by calling Migraph's toll-free support number), a 15-volt dc power transformer, a scan head with a four-inch wide LED scanning window, and the Touch-Up disk.

The $5\frac{3}{4} \times 5\frac{1}{4}$-inch scan head fits neatly and comfortably in the palm of your hand. On the right side you'll find a small slide switch that allows you to select four scanning resolutions: 100, 200, 300, and 400 dots per inch (dpi). On the left are a small thumb wheel to lighten or darken the image and a four-position switch to match the scanner's electronic output to the image type: a letter (line art) setting, and three settings for color or gray-scale photographs.

Installing the hardware is easy. Turn off the power switch, attach the cartridge to the serial-port connector, plug in the ac power adapter, and then attach the scan head's umbilical cord to the cartridge. Adding the software to your hard disk is equally simple: Insert the installation disk into any floppy drive, and drag the Touch-Up drawer from its window to the Workbench.

Touch and Go

The software is designed to work with an A500 and one megabyte RAM as a baseline configuration. If you plan, however, to scan 8 × 10-inch photos or full pages of text, you will need two or three megs of RAM. The manual does a creditable job of explaining problems you can encounter if you try to scan more than your RAM can chew.

Touch-Up is a full-featured, graphics-editing package that supports the Ami-





Above are two Migraph-scanned IFF files output from DeluxePaint III to a 300 dpi LaserJet-compatible printer. The top image is from a black-and-white original. The lower image, scanned from a color photo, uses double dithering for 32 gray scales.

Celebrate! PageStream v2.0

Put on your finest and don't forget to bring those party favors. Because we are having a huge celebration! Soft-Logik is proud to be shipping the Best in desktop publishing software for the Amiga, PageStream v2.0!

PageStream v2.0 is fully integrated with AGFA Compugraphic's hinted outline fonts, as well as Adobe Type 1 IBM format (without hints). With AGFA's hinted outlines, your output will appear crisp and clean. Combining this with an on screen display of outline fonts, PageStream brings true WYSIWYG one step closer to your Amiga.

To access furthur typefaces, you can use any Amiga Compugraphic Intellifont package or purchase an IBM typeface library and convert the files to Amiga format. You can convert those files with ease, just use Dos-2-Dos or Cross-Dos programs!

You demand precision in your work, and PageStream delivers. PageStream v2.0 allows for the specification of beginning and ending angles of arcs and rotation of objects in 1/100th degree increments. PageStream allows the specification of font sizes, and positioning and sizing of any object in 1/100th point increments.

Create documents the size of billboards and beyond. PageStream gives you plenty of room to work with. Not only can you create larger size documents but your documents can now have up to 1,000 pages. You can also "bleed" objects off the page with ease.

In addition, PageStream v2.0 includes the ability to draw polygons with Bezier cubic curves, load and save macros and tags separate from documents, print crop and registration marks to non-PostScript printers, move objects off or partially off the page, and save documents as templates for future works of similiar design. And more!

PageStream v2.0 contains these added features plus those you've grown to love and depend on! These powerful features will assist you in creating a unique and professional document!

Soft-Logik is also proud to be celebrating 21! That is 21 additional font disks that can be purchased for $39.95. These fonts will give you a truly diverse font library. Let the festivities begin!

Join in the celebration!

PageStream v2.0 requires 1 Meg of memory and 2 floppies or a hard drive

Registered Owners Upgrade for only $75
Suggested Retail Price: $299.95
Call **1-800-829-8608** to place your order today!

Soft-Logik Publishing Corp.
P.O. Box 290070
St. Louis, MO 63129

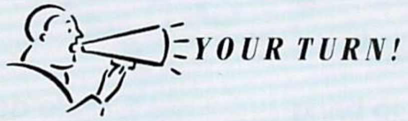
This entire ad was created with PageStream v2.0! All trademarks are property of their respective companies.

Circle 211 on Reader Service card.

ga's low- (320 × 200) or high- (640 × 400) resolution video modes. It takes advantage of virtual screen paging and scrolling to manipulate large scanned images, so the maximum image size is theoretically limited only by RAM. Touch-Up provides both icons and pull-down menus for most of its functions, so it is easy to use and understand.

Scanning an image requires only a few simple steps. Click on the Scan To Page icon, and a dialog box prompts you to set the height (2–14 inches) and width (full or half) of the scanned image. You now have ten seconds to start the scan process: Hold down the start button on the side of the scanner, then slowly roll the head over your image from top to bottom.

If you move the scan head too fast, an LED flashes a gentle warning, and if you do not slow down, the scan automatically aborts. The scanner forgives jerky movements and compensates for small amounts (5–10 degrees) of skew that sometimes occur when the scan head is not perfectly aligned with the printed image.



I have an Amiga 1000, and was a little frustrated that I had to order the adapter for my computer before I could use the scanner. I was also a little annoyed that the software originally packaged with the scanner (version .90) was not the final version.

Touch-Up is a really nice program, however. It has a lot of options, although it doesn't really feel like an Amiga program. I like the paint program; you can use it to create files at 300 dpi even if you do not use the scanner.

I use the scanner for my own desktop-publishing business and am truly satisfied with it (although I have not tried other scanners). Using it in conjunction with Professional Draw, I can produce great clip art. Migraph is responsive to customers' suggestions. The support line is easy to get through on, and the people are very helpful.

Michael Dugas
Manhattan, KS

Therefore, you need not acquire a polished scanning technique to produce an image that's free of the wigglies. You can combine an image with one already in memory—just restrict the scanned image to one area of the screen by using the Scan To Clip icon.

FLIP FILES

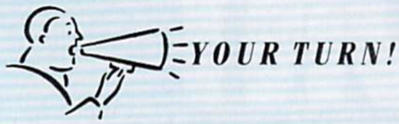
As a drawing program, Touch-Up excels. A wide assortment of drawing tools allow you to rotate by degree, to slant, compress, stretch, outline, embolden, and mask images. For adding to your images, there are B-spline and bezier-curve drawing brushes, pattern fills, spray paint, circles, and more. The editor also provides a good assortment of tools, including a fat pixel editor, a cleanup tool to remove stray pixels, and an exotic lasso tool that lets you define and move irregularly shaped areas of the screen window.

Two small gripes I have about the editor are its lethargic page-scrolling speed when working with virtual-page images and the lack of a switch to turn off the scroll bars while editing pixels close to ►

the edge of the screen window. While it's only mildly annoying to accidentally hit the scroll bar and leave your work area behind, it's downright frustrating to wait 6–10 seconds before you can resume work where you left off.

Touch-Up can easily exchange its image files with other programs. You can load monochrome IFF files directly into the editor, but because the program does not work directly with color images, it automatically converts Amiga standard hi-res, medium-res, HAM, and EHB (Extra_Halfbrite), and PC Paintbrush (PCX) color images to black-and-white format for display. Touch-Up saves standard IFF, EPS, IMG, MAC, PCX, and TIF file formats. In addition to monochrome output, you can select double dithering, which produces a dense, rich-looking image with up to 32 apparent gray levels.

Touch-Up assumes you will use its image files with other applications; that's why there's no provision for printing from the image editor. I tested Touch-Up files for compatibility with Gold Disk's Professional Page and Electronic Arts' DeluxePaint III and found no problems.



I think the Migraph scanner is great. I use it with an HP DeskJet printer, scanning at 300 dpi, and find the quality and output is super.

I purchased the scanner quite a while ago, when it was packaged with prerelease software (version .90), and later received versions .91 and 1.0. The latter implemented a gray-scale converter—which was not even mentioned in the original documentation—as a bonus. In working, I found that the software sometimes mangled gray-scale files. I reported this to Migraph, and although the company did not call me back, within a week I received version 1.01, which fixed the problem.

Since then, I have had no trouble using the scanner on my five-meg A500 with a serial-port switchbox. Some screens update slowly, but the software provides nice resizing tools. The equipment is well put together, and the support is good.

Bob Fergusson
Lyndhurst, NJ

The Resulting Image

The Migraph hand scanner produces excellent IFF image files that usually require only a small amount of cleanup. The hardware is highly forgiving of its operator and requires only limited skills. Unfortunately, it lacks a pass-through connector, so if you use other serial peripherals, you must invest in a switchbox to select the output device, or you must shut down your Amiga to swap cables each time you want to use the scanner.

Although Touch-Up is intuitive for the most part, it provides no help screens or other means of troubleshooting when something goes wrong. With the exceptions noted above, however, it provides a fast and efficient way to edit images and prepare them for use in a variety of applications.

If you are looking for a fast, inexpensive image-scanning and -processing solution, Migraph's hand scanner and Touch-Up will do the job.

Continued on p. 114

Circle 74 on Reader Service card.

Use QUARTERBACK to save your Data.

Use QUARTERBACK TOOLS to save your A**!



Have you ever deleted the wrong file (or worse yet, ALL your files) with a slip of the finger?

Have you seen this awful message: "Error validating DHO"?

Then you need **QUARTERBACK TOOLS**, the ***fastest*** and ***easiest*** way to recover your lost files on any AmigaDOS volume.

QUARTERBACK TOOLS also optimizes the speed and reliability of your Amiga hard disks and floppy disks by:

- Repositioning your files to optimum locations on the disk, eliminating file fragmentation, and consolidating disk free space.
- Searching the entire disk for errors and marking bad areas "out of service."
- Curing validation problems; finding and fixing corrupted directories.

QUARTERBACK TOOLS runs on any Amiga using either the old or new filing systems, and runs with new and old Workbench versions.

QUARTERBACK TOOLS*... now* ***this*** *is no donkey!*

And to close the barn door ***before*** the horse escapes, use **QUARTERBACK** the ***fastest*** and ***easiest*** hard disk backup program for the Amiga.

Other useful products from Central Coast Software:

Mac-2-Dos for transferring Macintosh files to and from the Amiga.

Dos-2-Dos for transferring MS-DOS/Atari files to and from the Amiga.

CCS

Central Coast Software • 424 Vista Avenue, Golden, Colorado 80401
(303) 526-1030 • Fax (303) 526-0520
Dealer Inquiries Welcome

MasterCard VISA

Circle 143 on Reader Service card.



Artfully Simple!

4096 colors with animation!
AEGIS SPECTRACOLOR

SpectraColor™ works with the Commodore Amiga's powerful HAM mode, allowing you to paint in 4096 colors using all the standard tools you've come to expect from a professional paint system.

Use **Brush Animation** (the method used by Deluxe Paint III™) to create stunning animated movies with a simple point-and-click method. Just draw the path of the animation, then add the effects you want, including simulated 3-D, wraps, twists, and stretches.





Brushes can be rotated, flipped on any axis, resized, bent, twisted, stretched and tilted in three dimensions.

SpectraColor features incredible special effects, including wrapping images on objects, pantograph tool, luminosity, and many transparent and shadow functions.

Developed by the programmers of Photon Paint™, SpectraColor is the final refinement of pure artistry on the Amiga, and is destined to become the new Amiga HAM standard.

Available Winter 1990.

A new concept in sound...
AEGIS AUDIOMASTER III

AudioMaster, already the leading software for making and editing sound samples, has been substantially upgraded with the new AudioMaster III.

New features include "sequencing", higher sampling rates, extra programs such as a "CD Player", a Compressed Data Format, several additional utility programs, and real-time flange.

"Sequencing", or "Loop Sequencing", lets you create up to 999 loops within a single waveform, and then play them in a defined sequence. With this feature, you can create incredibly complex songs which occupy little disk space and require much less memory to play.

The CD Player is a bonus program for playing up to 20 AudioMaster files in sequence in the background, while you work on something else.

Whatever you do with AudioMaster III, you'll *hear* the difference.

Retail price: $99.95. Available now.



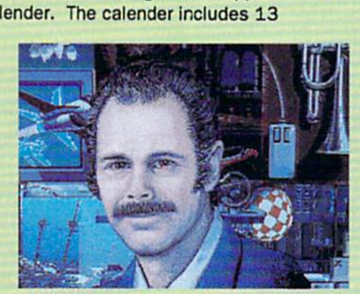
Use AudioMaster III to create instruments for Sonix and Deluxe Music Construction Set™, scientific applications, desktop video, and any other need you may have.



The AudioMaster III CD Player emulates a standard compact disc player, and plays up to 20 AudioMaster-compatible sound files. Use AudioMaster III to create instruments for Sonix and Deluxe Music Construction Set™, scientific applications, desktop video, and your other audio-creation needs.

Jim Sachs Signature Collection™ 1991 Calender.

The favorite works of Jim Sachs, renowned Amiga artist, appear in his Signature Collection 1991 Calender. The calender includes 13 pictures, spanning his early classic originals through recent works. Each month's calender includes helpful hints for the aspiring computer artist, as well as full information on the picture's origin.



Suggested retail price is $14.95. Available now.

OxxiAegis

WE FOCUS ON TECHNOLOGY

P O BOX 90309, LONG BEACH, CA 90809-0309 USA
Telephone: (213) 427-1227 FAX: (213) 427-0971

Circle 75 on Reader Service card.

From p. 110

Migraph Hand Scanner with Touch-Up
Migraph Inc.
200 S. 333rd, Suite 220
Federal Way, WA 98003
206/838-4677
$399
One megabyte required.

EXCELLENCE! 2.0

Renewed interest

By Geoffrey Williams

WRITERS TEND TO develop very close relationships with their word processors. After spending years with Scribble!, grumbling over its inadequacies, I was wooed by Word Perfect, only to be heartbroken by its nonstandard, poorly designed interface and constant crashing. In excellence!, however, I found all the features I'd been looking for. I fell in love with the grammar checker, and also liked the fact that it is similar to Word on the Mac, a program I am well acquainted with.

The romance soon soured, however. For all the things I loved about excellence!, its screen refresh was just too slow. Waiting for the screen to update every time I added a new sentence disrupted my train of thought. Also, I lost whole documents when the program unexpectedly crashed from time to time. We parted company.

With the release of version 2.0, I have renewed my friendship with excellence! The program's speed has increased dramatically: Pasting a sentence into a paragraph is now almost instantaneous. Also, it keeps up with me no matter how fast I type, and even does so with my wife, who uses all her fingers! Typing in new text as an insertion in a paragraph is still a little slow, but is at least acceptable. Finally, Guru visits seem to have been eradicated.

BIG CHANGES

One of the most significant changes is in the area of printing. You can now save print settings in the excellence! initialization file, and a landscape (sideways) print format has been added. Two new options let you change printer fonts and mix graphics with your printer's internal font. The program now supports color Postscript printers—you can even translate Professional Page Postscript fonts for use in excellence! Using the public-domain utility TOPP (To Professional Page), you can translate excellence! 2.0 files to Professional Page format as well, preserving fonts, style, subscripts, and superscripts. If both programs have the same colors defined, you can preserve the color information.

Another significant addition is the inclusion of virtual memory. This lets you use a floppy or hard disk as memory storage, although it works much more slowly. For example, if you have a hard drive and a megabyte of memory, it is possible to create documents as large as 976 pages (over 2.5 megabytes).

The original excellence! was designed to work with only 512K, which caused memory shortages and constant loading from the disk. In addition, you could ►

MONTGOMERY GRANT

ESTABLISHED 1967

AMIGA WORLD 11/90

OUTSIDE USA & CANADA CALL
(718) 692-0790
FOR CUSTOMER SERVICE
Call: Mon-Thurs, 9AM-5PM
Fri, 9AM-3PM (718) 692-1148

Retail Outlet, Penn Station, Main Concourse
(Beneath Madison Square Garden) NYC, N.Y., 10001
Store Hours: Mon-Wed 9:00am-7pm/Thurs 9-8/Fri 9-3:00
Sat CLOSED/Sun 9:30AM-7PM
FOR ORDERS & INFORMATION IN USA & CANADA CALL TOLL FREE
1-800-759-6565

OR WRITE TO:
Montgomery Grant; Mail Order Department P.O. Box 58, Brooklyn N.Y., 11230
FAX NO. #7186923372
TELEX 422132 MGRANT

ORDER HOURS: Mon-Thurs 9:00am-7:00pm / Fri 9:00am-4:00pm / Sat CLOSED/Sun 9:30am-6:00pm (ET)
NO SURCHARGE FOR CREDIT CARD ORDERS / WE INVITE CORPORATE AND EDUCATIONAL CUSTOMERS
RUSH SERVICE AVAILABLE / TOLL-FREE TECHNICAL SUPPORT

AMIGA COMPATIBLE PERIPHERALS & ACCESSORIES

AMIGA 1000 MEMORY & ACCESSORIES....AVAILABLE
AMIGA 3000 32 Bit Memory....IN STOCK
AMIGA APPETIZER SOFTWARE (Word Process Music, Paint, Game, Tutorial Program)....$39
AMIGAVISION SOFTWARE....$79
1MB FATTER AGNUS CHIP(8372A)....$99
AMIGA 500 POWER SUPPLY....$66
AMIGA 2000 POWER SUPPLY (w/Trade-in)....$99
A-MAX MAC Emulator for AMIGA....$109
A-MAX EMULATOR 2....$139
A-MAX ROM....$149
CUTTING EDGE Mac Compatible Drive for A-MAX....$165
AMIG-A-TOSH PLUS....$239
APPLIED ENGINEERING 1.52 MB HI-DENSITY DRIVE....$199

BASEBOARD

Memory Expansion for A-500 (uses A-501 Expansion Slot)

0K	$109	2MB	$229
512K	$139	3MB	$289
1MB	$169	4MB	$369

2MB Daughter Board Available

CALIFORNIA ACCESS 3.5" DISK DRIVE....$99
COLOR SPLITTER....$109
FLICKER FIXER....$355
DENISE EXTENDER for FLICKER FIXER....$119
FRAME GRABBER....$519
FRAME GRABBER 256....$579

GENLOCKS

MINIGEN....$195
OMNIGEN 701....$1369
SUPER GEN....$599
SUPERGEN 2000S....$1449
MAGNI 4004 OR 4004S w/CONTROLLER..$1449
NERIKI GENLOCK....$1469
NERIKI DESKTOP....$879
VIDTECH SCANLOCK....$729

MASTER 3A-1 3.5" DISK DRIVE....$92
MASTER 3A-1D....$139
MEGA-MIDGET RACER (25 MHz.)....$639

MICROBOTICS

Memory Upgrades for A-2000

8up 0K	$129	8up w/6MB	CALL
8up w/2MB	$273	8up w/8MB	CALL
8up w/4MB	$433		

PULSAR A-500 PC COMPATIBLE BOARD....$498
SHARP JX 100 Color Scanner w/Software & Cables....$739
SUPRA 3.5" EXTERNAL DRIVE....$92

SUPRA RAM 2000

2MB RAM	$209	6MB RAM	CALL
4MB RAM	$319	8MB RAM	CALL

SUPRA 2400 EXTERNAL....IN STOCK
SUPRA 2400zi INTERNAL....$117
SUPRA RAM 500 (512K Expander for A-500....$65

AMIGA™

AMIGA 500
AMIGA 2000 & 2000HD
AMIGA 2500/30 & AMIGA 3000
ALL IN STOCK!
ALL AMIGA PERIPHERALS & ACCESSORIES IN STOCK

PRICED SO LOW THAT WE ARE NOT PERMITTED TO PRINT THEM

AMIGA 500/2000 HARD DRIVE PACKAGES

SCSI CONTROLLERS

SEAGATE DRIVE	DRIVE PRICE	Xetec Mini Fastcard (A2000) $89	Trumpcard 2000 $135	Xetec Fastcard Plus A2000 (exp. to 8MB) $175	Trumpcard 2000 Professional $204	Trumpcard A500 (exp. to 2MB) $219	Trumpcard 500 Professional $269	Supra A500 * (2MB exp. avail.) $229	Xetec Fast Trak A500 $329
ST-125N-1 (20MB,28MS)	$239	$319	$359	$409	$425	$419	$489	$459	$549
ST-138N-1 (30MB, 28MS)	$255	$339	$374	$424	$455	$440	$515	$479	$569
ST-157N-1 (49MB,28MS)	$284	$369	$409	$454	$479	$484	$545	—	$589
ST-177N (60MB, 3.5")	$339	$419	$449	$510	$539	$524	$595	$619	$654
ST277N (60MB, 5.25")	$269	$339	$389	$439	$459	—	—	—	—
ST-296N (80MB)	$329	$409	$454	$499	$525	—	—	—	—
ST-1096N (80MB 3.5")	$359	$439	$489	$529	$559	$539	$615	—	$679
QUANTUM (40MB)	$325	$409	$444	$489	$525	$499	$589	$544	$629
QUANTUM (80MB)	$499	$579	$599	$669	$695	$708	$759	$709	$828
QUANTUM (105MB)	$549	$629	$669	$719	$749	$749	$799	$779	$869
QUANTUM (170MB)	$859	$939	$969	$1024	$1049	$1049	$1099	$1089	$1169
QUANTUM (210MB)	$999	$1069	$1119	$1169	$1169	$1179	$1249	$1229	$1319

HARD DRIVE CARD PACKAGES AVAILABLE - CALL
* A-1000 Ver. add $80

The Lowest Pricing - Lifetime Toll Free Technical Support - Experienced & Courteous Service - All You Expect From MONTGOMERY GRANT

WE WILL BEAT ANY LEGITIMATE DEAL ON ANY PRODUCT WE SELL!

COMMODORE 1084 RGB COLOR MONITOR $279

PRINTERS



HEWLETT PACKARD

HP DESKJET +....$669.95
HP DESKJET 500....$569.95
HP LASERJET IIP w/Toner....$989.95
HP PAINTJET....$949.95
HP LASERJET III w/Toner....$1639
HP PAINTJET XL....$1899

CITIZEN
GSX-140....$329.95
GSX 200....$199.95
COLOR OPTION KIT for GSX Printer....CALL

STAR
NX-1000II....CALL
NX-1000
RAINBOW....CALL

CANON
BJ-130E....$599.95

PANASONIC
KXP-1180....$149.95
KXP-1191....$229.95
KXP-1124....$289.95
KXP-1624....$339.95

EPSON
LX-810....$199.95
FX-850....$349.95
LQ-510....$289.95

BROTHER HR-5 80 Col. Thermal Printer..$59
NEC MULTISYNC IIID MONITOR....$649

ALL OTHER MODELS IN STOCK! ALL MODELS DISCOUNTED!

GREAT VALLEY PRODUCTS

28MHz. 68030 ACCELERATOR FOR A-2000...$649
GVP 3001 KIT (28 MHz.) w/68030, 4MB, 68882.$1429
3001 KIT w/Quantum 40MB....$1769
3001 KIT w/Quantum 80MB....$1999
GVP 3033 KIT (33MHz.) w/68030, 4MB, 68882..$1629
3033 KIT w/Quantum 40MB....$1969
3033 KIT w/Quantum 80MB....$2189
GVP 3050 Kit (50 MHz.) w/68030, 4MB, 68882..$2469
3050 Kit w/Quantum 40MB....$2799
3050 Kit w/Quantum 80MB....$3029

GVP A-500/A-2000 HARD CARDS & DRIVES

A-500 HD45+....$649
A-500 HD40Q+....$689
A-500 HD80Q+....$869
A-2000 HC/0 SERIES II....$155
A-2000 HC/40Q SERIES II....$499
A-2000 HC/60 SERIES II....$519
A-2000 HC/80Q SERIES II....$719
A-2000 HC/100Q SERIES II....$769
FOR 8MB FAST RAM CAPABILITY ADD $40

***NEW* SUPRA 500XP HARD DRIVE**
(512K RAM Expandable to 8MB)
20 & 40MB....CALL
SUPRA WORDSYNC for A-2000 IN STOCK

MasterCard VISA

TRADE-IN YOUR USED COMMODORE OR AMIGA EQUIPMENT FOR A NEW, BETTER MODEL! CALL FOR DETAILS!

Certified check, bank check, money orders, approved P.O.'s, Visa, Mastercard, Diner's Club, Am-Ex, Optima, Cart Blanche, C.O.D.'s & wire transfers accepted. Please call before submitting P.O.'s. No additional surcharge for credit card orders. Non-certified checks must wait 4-6 weeks for clearance.. Prices and availability subject to change without notice. Not responsible for typographical errors. Return of defective merchandise must have prior return authorization number, or returns will not be accepted. Please add 5% shipping & handling (min. $6). Orders over $1200 are discounted to 3% shipping & handling Orders over $3000 are discounted to 2%. (Canadian orders please call for shipping rates). Second Day & Next Day Air available with extra charges. APO/FPO orders please add 10% shipping & handling (over $1200-8%, over $3000-6%). All APO/FPO orders are shipped first class priority air. All orders can be shipped Air Express-call for details. D.C.A. #800233. Amiga is a registered trademark of Commodore-Amiga Inc.

save only to the program disk with a single-drive system, because the data for the file requester was called from that disk. The new version requires one meg and works much better. Also, when you quit, the program frees up the memory it uses—something the original version did not always do.

Having Words

Both the dictionary and thesaurus are from Merriam-Webster (the Proximity Linguibase) and are top of the line. The dictionary has been beefed up to 140,000 words, and the program now consults the customizable dictionary as well as the standard one to guess a word. The improved thesaurus gives you not only a definition for any word you highlight, but also lists synonyms and antonyms.

I am disappointed, however, that you can no longer load the dictionary and thesaurus into RAM from within the program; to accomplish this, you must now run an included IconX script or load and assign them from the CLI. And you cannot load just one utility or the other, because the Assign command affects both. This is unfortunate, because together they take up more than a megabyte of RAM. On the positive side, you can still type and edit your document while the dictionary and thesaurus are active.

Strangely, the grammar checker still loads into memory from within the program. It has not changed from the original, and does a very good job of catching awkward phrasing, double words, and punctuation errors that are easy to miss when proof reading.

The powerful macro capability has been expanded, so that a macro can either execute another macro or repeatedly execute itself. You can also chain macros together. Although it is easy to assign menu functions to function keys ►



Calling all fonts!

YOUR TURN!

My experience with excellence! 2.0 has been very satisfying. I find the program stable and powerful, but still easy to use. As an excellence! 1.0 owner, I recommend it as an upgrade and also to anyone looking for a solid word processor.

In the future, I would like to see better graphics handling (including support for more than eight colors), complete text-wrapping capabilities, and support for Compugraphic fonts and ARexx.

Randy Payment
Dover, NH

or hot-key combinations, you still cannot assign macros to other than single keys. I would like to be able to set up a macro to replace the letters AW with the word AmigaWorld, for instance, but this is impossible.

Among the many little touchups is a facility for inserting IFF, excellence!, and ASCII text. Line spacing is easier to adjust, and if you do not have a document open, you can change interlace and screen colors instantly. A new Go To Page requester pops up when you click on the page number at the bottom of the screen. The spelling checker can now cause the screen to flash and a beep to sound.

Several utilities have been added, including a new hard-drive installation program. It gives you a full-screen requester showing all the paths, and it is very easy to use. A verify program assures that everything copies to your drive without error.

DESPITE IMPERFECTIONS...

There are still a few things I don't like about excellence! The file requester, for instance, has but a single button to toggle between devices. This is annoying; it should provide buttons for each mounted device. Also, I would prefer a revised manual to cover the many program changes, not just an addendum.

Excellence! 2.0 works under Workbench 2.0, and looks great in interlaced mode on an A3000. In addition, the A3000's extra speed makes excellence! a joy to use. For those with standard monitors, the program's default colors do a good job of minimizing the effect of interlace flicker.

How does excellence! 2.0 stack up to the competition? Of the full-featured graphics-capable word processors, I would give Pen Pal (Softwood Company) an edge in graphics handling, and rate ProWrite 3.0 (New Horizons) the best for script writing and storyboarding. If the ability to handle and manipulate words is your main concern, however, I recommned excellence! 2.0 above the others. Its spelling checker and thesaurus are unsurpassed, and it is the only one with a grammar checker. It is also the only one that has all the basic text and formatting features, including those for tables of contents, indexes, multiple columns, headers, and footers. For these reasons, excellence! 2.0 is the only graphics word processor I would use to write a book or lengthy term paper.

In fact, excellence! 2.0 compares well with non-graphics word processors. It is the only graphics-oriented package that comes close to the powerful but annoying Word Perfect in terms of text handling. If it worked as well with Professional Page (Gold Disk) as Transcript (Gold Disk) does, excellence! 2.0 would become my one-and-only word processor.



YOUR TURN!

In version 2.0 of excellence!, the typing speed has been greatly improved and the scroll gadget allows scrolling through pages without waiting. The spelling checker is also quicker, has improved guessing abilities, and provides over 140,000 words with medical, technological, geographical, legal, and other supplements. Also, the thesaurus is now very comprehensive and the printing function has been enhanced to allow both text and graphics in Near-Letter-Quality mode.

MSS's technical support is one of the best. The company answers questions immediately and even replies to mail. Excellence! 2.0 is full-featured and bug free. If MSS made it still faster and allowed more than one line of text beside a graphic image, it would be the Amiga's best word processor.

Bob Lockie
Burlington, Ont., Canada

excellence! 2.0
Micro-Systems Software
12798 Forest Hill Blvd.
Suite 202
West Palm Beach, FL 33414
407/790-0770
$199.95
One megabyte required. ►

The Software Shop, Inc.

SOFTWARE AND HARDWARE SPECIALS

22 FRONT STREET WORCESTER, MA 01614

MasterCard **1-800-752-0050** VISA

Orders only 8:00 am - 7:00pm EST Mon. - Fri. Saturday 9:00am - 4:00pm

For inquiries, international orders and customer service call:

(508) 756-6452 Fax (508) 799-9354

SIZZLING SUMMER SALE

SOFTWARE

GRAPHICS & VIDEO

3-Demon	73
3d options	35
Animagic	95
Animate 3-D	99
Animate 4D	439
Animation editor	39
Animation effects	32
Animation Flipper	32
Animation multiplane	58
Animation stand	32
Animation Station	69
Animation Titler	59
Animation W/images	89
Animotion	65
Architectural design	23
Broadcast Titler	189
C light 3d editor	39
Calligari	169
Chroma paint	48
Comicsetter	65
Credit Text Scroller	29
Deluxe Paint III	102
Deluxe photo lab	102
Deluxe print II	59
Deluxe production	137
Deluxe video III	106
Design 3-D	67
Designasaurus	32
Digi View Gold 4.0	131
Digi-Paint 3	69
Digimate III	28
Digiworks 3d	89
Director Tape	38
Director's Toolkit	26
Elan Performer	41
Express Paint III	89
Fantavision	42
Future design 3-d	23
Graphic studio	19
Human design 3-d	23
AmigaVision	105
Interchange	32
Interior design sculpt3d	23
Invision	99
Lights Camera Action	49
Microbot design 3-d	23
Modeler 3d	64
Movie clips	29
Movie setter	65
Page flipperfx	95
Pagerender 3-d	105
Photon expansion disk	20
Photon Paint 2.0	97
Photon video cell anim.	97
Pixmate	43
Print master plus	33
Pro video plus set I	83
Pro video plus set II	83
Pro Video Post	220
ProVideo Gold	205
Sculpt-Animate 4-D Jr.	95
The Director	46
Turbo silver 3.0	115
Turbo Silver Module	20
Tv Text Prof.	111
Tv-show 2.0	64
Tv-text	64
Video effects 3d	121
Video scape 3-d	120
Video titler	95
Zoetrope	91
3d Professional	329

MONITORS

Amdek multisync 12' monitor	512
Mitsubishi Diamon Scan	559
NEC 3D multisync	699
Sieko cm1430 monitor	699
Sony multi-scan Monitor	535
Taxan 1000 20' Ultrasync	2899
Zenith 14' Flat screen mon.	799

ACCOUNTING

Easy Ledger	195
Financial plus	189
Invester advantage	63
Miamiga ledger	63
Micro lawyer	39
Nimbus record keeper	95
Project Master	129
Service Industry Acc.	Call

A2000/A2500 Harddrives
HardFrame 2000 With:

Connor 209mg 15ms 3½ drive	1,293
Quantum 105mg 11ms	869
Quantum 80mg 11ms	799
Quantum 40mg 11ms	559

Xetec FastCardPlus With:

Connor 209mg 15ms 3½ drive	1,271
Quantum 105mg 11ms	879
Quantum 80mg 11ms	769
Quantum 40mg 11ms	569

A500/A1000 Harddrives
Xetec Fasttrack System With:

Connor 209mg 15ms 3½ drive	1,399
Quantum 105mg 11ms	979
Quantum 80mg 11ms	879
Quantum 40mg 11ms	699

GVP-A2000-HC/O With:

Connor 209mg 15ms 3½ drive	1,243
Quantum 105mg 11ms	849
Quantum 80mg 11ms	755
Quantum 40mg 11ms	549
SYQuest w/44mg Cartridge	789

GVP-Impact A2000 SCSI-8/0 With:

Connor 209mg 15ms 3½ drive	1,294
Quantum 105mg 11ms	907
Quantum 80mg 11ms	818
Quantum 40mg 11ms	606
SYQuest w/44mg Cartridge	850

Supra WordSync A2000 With:

Connor 209mg 15ms 3½ drive	1,205
Quantum 105m. 11ms	907
Quantum 80mg 11ms	779
Quantum 40mg 11ms	729
SYQuest w/44mg. Cartridge	739

Memory Expansion A2000

8UP 2mg A2000	249
8UP 4mg A2000	369
8UP 6mg A2000	459
8UP 8mg A2000	559
AdRAM A2000 2mg	229
AdRAM A2000 4mg	349
AdRAM A2000 6mg	449
AdRAM A2000 8mg	549
Supraram A2000 2mg	229
Supraram A2000 4mg	339
Supraram A2000 6mg	439
Supraram A2000 8mg	539

Memory Expansion A500/A1000

BasedBoard 2mg A500	249
BasedBoard 4mg A500	369
BaseBoard A500 w/512K	179
Fastram Card A500/A1000	99
Fastram Mod. 1mg A500/A1000	129
Spirit 0K A500/A1000	229
Spirit 1.5 A500/A1000	339
Spirit 1mg A500/A1000	299
Spirit 512K A500/A1000	262
Starboard 0K A1000	269
Starboard II 1mg A1000	339
Starboard II 2mg A1000	439
Starboard II 512K A1000	291
501 Clone 512K (MIB) A500	79
ICD ADR520 1.8mg A500	299

CHIPS

Dram-1MG x 1 100ns-80ns	10
Dram-256 x 4 100ns-80ns	11
Dram-256 x 1	3
Dram-256 x 4 100ns-80ns ZIP	11
Simm Module 1MG x 8 80ns-100ns	83

LANGUAGES

A/C basic	129
A/C fortran	195
Algebra II	33
Arexx	33
Assem pro	65
Aztec C developer	195
Aztec C professional	129
Benchmark C library	62
Benchmark iff library	62
Benchmark modula 2	128
Benchmark simplified	62
Cape68k	59
Cross Dos	22
Devpac Ed/Assem/link/debg.	66
Dissasembler	45
GFA basic 3.0	95
Hisoft Basic professional	118
Inovatools #1	54
Lattice development system 5.4	225
Metascope debugger	65
Power windows v2.5	58
Source level debugger	65
True basic	65
W. shell	33

SPREAD SHEET

Formation	47
Haicalc	32
Maxiplan 500	95
Maxiplan plus	126
Super Plan	97
VIP Professional	65
Advantage	125

PRINTERS

1124 Panasonic Printer	349
Alps Allegro23 PIN	424
Citizen GSX140 Printer w/color	399
HP Paint Jet	1025
NEC LC890 laser PS.	3395
Star nx rainbow	259

CAD

Draw 2000	183
Home builder cad	129
Home builder choice	53
Intro Cad Plus	99
Pro-board Plus	399
Pro-Net	399
Ultra Design	269
X-Cad Designer II	97
X-Cad designer Pro	304

SOUND & MUSIC

4-op deluxe	97
Audio master	37
Audio master II	67
Back songbook	27
Bars & Pipes	210
Copyist II	179
D-50	99
Deluxe music	69
Dr drums	28
Dr keys	28
Dr T's Keyboard	160
Dr T's Midi recording studio	47
Dx heaver	97
Dynamic drums	52
Dynamic studio	129
Kcs Level II	225
Midi Magic	97
Mt-32	97
Music student	38
Music-X	205
Pro sound designer	125
Promidi studio	129
Sonix	51
Sound Oasis	69
Sound samplers	78
Sound Track Vol.1	35
Studio magic	65
Synthia	59
Synthia Pro.	199
Texture	97
Tiger Cub	65
Utilities 2(mimatics)	43

COMMUNICATION

Atalk III	65
BBS pc	96
Online	44
Online Platinum	67
Skyline BBS	99

EDUCATION

Adventure of sinbad	32
Aesop's fables	32
All about America	35
Animal kingdom	32
Decimal dungeon	32
Discovery game spell	25
Discovery game math	25
First letters and words	35
First shapes	35
Fraction action	32
Great states	25
Kid talk	35
Kinderama	32
Link word French	22
Link word German	22
Link word Russian	22
Link word Italian	22
Link word Spanish	22
Math talk	35
Math talk fraction	35
Math wizard	35
Perfect score	51
Quiz master	51
Read & rhyme	32
Read-a-rama	32
Speller bee	35
Tales from Arabia	32
Wordmaster	32
Kwik speak spanish	19
Spell bound	25
Learning curve	52
Where in World C.S.	32
Dinosaur Discov. kit	29
Puzzle Story book	29
Talking Animator	34
Rhyming note book	30
At the Zoo	27
Letters For You	28
Numbers Count	28
Where in the U.S.	35
World Atlas	39
My Paint	33
Math Odyssey	33
World Odyssey	33

HOME ACCOUNTING

Desktop budget	$46.00
Money mentor	$65.00
Phaser	65.00
Tax Break	53.00

UTILITIES

B.A.D. disk optimizer	32
C.B. Tree	65
Can do	99
Celebrity cook book	20
Cygnused Professional	65
Disk 2 disk	33
Disk master	33
Disk mechanic	59
Dos 2 Dos	35
Doug's math aquarium	52
Dude	35
Dunlap Utilities	65
EZ backup	33
Facc II	22
Fine print	33
Fleet check	33
Grabbit	19
Laser scripts	28
Laser up: fonts	26
Laser up plot	33
Laser up: print	58
Laser up: utilities	28
Mac 2 Dos	99
Matrix 6	97
Momentum Mail	22
Nag Plus Schedule Assist.	52
Pixel script	104
Pro script	32
Project D	32
Quarterback	45
Raw copy 1.3	39
V.I.P.	32
X-copy II	29

ENTERTAINMENT SOFTWARE CLEARANCE

We have them all! Over 300 titles in Stock. Prices from $14 to $29 on all games. Call for Deals. Minimum Order - 2 games

DESKTOP PUBLISHING WORDPROCESSING

City Desk 2.0	135
Citydesk	97
Critic's Choice	159
Gold spell II	30
Kindwords	65
Page setter II	89
Pagestream 2.0	199
Pen Pal	102
Pro-draw clip art	42
Pro-page template	42
Professional Draw 2.0	129
Professional Page 1.3	199
ProWrite 3.0	105
Publisher plus	69
Publishers choice	130
Saxon Publisher	276
Shakespeare	59
The Works Platinum	159
Transcript	47
Word perfect	159
Wp library	79

FONTS

Anim Font1 Kara	34
Anim Font2 Kara	34
Asha's fonts	57
Calligrapher	85
Fancy 3d fonts	52
Font set 1	22
Headline Fonts	54
Headlines 2	47
Inter font	76
Kara fonts color	50
Kara fonts Headline 2	48
Kara fonts subheads	48
Lion fonts	56
Masterpiece fonts	159
News letter fonts	29
Page Stream fonts 1-15	27
Profonts I Prof.	23
Profonts II decorative	23
Studio font	29
Subheads	47
Zuma 1-4	69

DATABASE MGMNT

Your family tree	32
Data retrieve	51
Data Retrieve Prof.	189
Dbman V	189
Organize	49
Super base	52
Superbase pers. II	99
Superbase Pro. 3.0	229

ACCESSORIES

6 outlet AC Surge	16
A-B Switch cable	35
A/B/C/D Switchbox	39
Boing optical mouse	109
Copy Stand	69
Ece Midi 1000	52
Ece Midi 500/2000	52
Ergo Joystick	17
Gravis Joystick	37
Modem cable A1000	15
Modem cable A2000/500	15
Mouse pad	9
Mouse Stick	99
Printer cable 2000/500	15
Printer cable A1000	15
Video int. A500	65
Future sound A500/A2000	92

HARDWARE ACCESSORIES

Master 3A Drive	109
Baud Bandit	129
Digi-Droid	79
Easyl A1000	349
Easyl A2000	379
Easyl A500	345
Flicker fixer	495
Framegrabber	599
Future sound	129
Gen One	689
Internal 3.5drive A2000	99
Live A2000	349
Live framegrabber A1000	279
Live framegrabber A500	305
Midi Gold (500)	60
Naksha Mouse	56
Perfect sound A1000	69
Perfect sound A500/A2000	75
Phoenix power supply A500	95
Power Supply A500	109
Progen	379
Scanlock	789
Sharp JX 100 Scanner	789
Super Gen	695
Supra 2400bd internal	139
Supra modem 2400bd	129
Synergy 500	199
US Robotics 9600bd HST	669
WV1410 Panasonic Camera w/lens	199

Terms: We accept Visa and MasterCard without surcharge. Mass residents add 5% sales tax.

Our Policy: Prices are subject to change without notice. All items subject to availability.

All products carry manufacturers warranty. Defective software will be replaced with the same item only.

All sales are final. We cannot guarantee compatibility.

All exchanges must be pre-approved. 20% restocking fee will apply for non-defective returns. For customer service call (508) 756-6452.

To order by mail: We accept Money Orders. Certified Checks. Personal Checks, and Company Checks. Allow 10 days from date received for company and personal checks to clear.

COD's: $5.00 COD charge per order. $1000.00 maximum order without authorization. We accept only Cashier's Checks or Money Orders on COD's.

Shipping: UPS Ground: $5.00 Minimum per item. UPS 2nd: $8.00 Minimum per item. UPS Next day: $25.00 per item.

Circle 134 on Reader Service card.

TAKE YOUR TURN!

We want to know what you like and don't like about your new Amiga hardware and software. Some products we are looking at for upcoming issues are:

- 3D Text Animator (Mindware)
- A2024 (Commodore)
- A2232 (Commodore)
- A2320 (Commodore)
- AdSCSI 2000 with Q40S (ICD)
- AProDraw 2.0 (R&DL Productions)
- Draw4D (Adspec)
- FractalPro (MegageM)
- MathVision (Seven Seas)
- Pro Video Post (Shereff Systems)
- Sketch Master (Dakota)
- VidControl (Integral Systems)

To comment on these, write us (Your Turn, *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458) or call (800/ 441-4403, ext. 346) by Oct. 20, 1990. Write or call at any time concerning other new releases.



B A C K T A L K

CANDID RESPONSES TO *AMIGAWORLD* REVIEWS

Deluxe Standoff

I disagree with the Back Talk letters criticizing Electronic Arts' DeluxeVideo III (Sept. '90, p. 98). I use an Amiga for television graphics, and do most of my work using DVideo and DPaint III. DVideo *does* support true overscan—352 × 480 and larger—through the View requester. My only complaints are that it is slow in 640 × 400 mode and that backdrops do not work with a 68030 accelerator.

Otherwise, I find DVideo to be extremely powerful and reliable. It is amazingly flexible, allowing you to create effects beyond the great many that it handles automatically. In addition, the intuitive graphic interface makes video work as simple as can be. I particularly like the visual control over timing and the powerful motion requesters.

DeluxeVideo III is a pleasure to use and gives professional results.

—***Morgan Adams***
Panama, NY

Who Tops Publishing?

Your review of Soft-Logik's PageStream 1.8 (July '90, p. 14) was little more than a promotion for Gold Disk's Professional Page. When both programs can output to a PostScript printer or typesetter using Adobe fonts, how can you assert that the font quality of one program is superior?

The review said that PageStream was "stable enough to use," thereby suggesting that Pro Page is rock solid. Come on now! Pro Page in my experience is much more unstable than PageStream 1.8.

You seem to dismiss the entire subject of features, which is at the heart of desktop publishing. In my opinion, PageStream wins the "features war." To duplicate a group of components, for example, both programs require you to draw a box around the pieces. But while PageStream's clone procedure is elegant, Pro Page's is laborious and unprofessional. And that's not all.Your review did not do justice to PageStream.

—***K.A. Klosson***
Oceanside, CA

A Press-idential Pardon, Please

Readers of the Sept. '90 Reviews section probably noticed some problems with screen photos. Specifically, photos for JMH's The Talking Animator 2.0 and Mindware's Digi-Mate III were switched (pp. 76 and 78), and on p. 86, the two output examples of The Art Department (ASDG) were flip-flopped. We're sorry for the confusion.

Another error crept into the review of Soft-Logik's PageStream 1.8 (July '90, p. 78). Here, we priced PageStream's optional disk of screen fonts at $99.95. The disk actually goes for $39.95. —***Editors*** ■

INVESTIGATE THESE

Computer Mail-Ord

The Case Kidnapped



STOP

Have you noticed the "other guys" are suddenly reducing their prices—ASK YOURSELF WHY???

It's because we, the new kid on the AMIGA block*, will ALWAYS give you the lowest price on EVERY PRODUCT WE SELL and back it up with our unsurpassed customer service.

SOFTWARE

(Additional Titles in Stock)

ACCOLADE
Blue Angels
Hardball II
Jack Nicholas Golf
The Duel: Test Drive II
The Cycles
$29

Heat Wave: Offshore Boat Racing
Day of the Viper
$27

ARTWORX
Bridge 6.0
Strip Poker III
$24

AVATAR
Heart of the Dragon
$29

BRODERBUND
Simcity
Where in Euope is Carmen SD
Where in the USA is Carmen SD
Where in the World is Carmen SD
$28

CALIFORNIA DREAMS
Block Out
Vegas Gambler
Tunnels of Armageddon
$25

CENTRAL COAST
DOS-DOS (Read & Write IBM Disks!)
$31
Quarterback (Backup Utility)
$39

FOR A COMPLETE PRICE LIST OF OUR PRODUCTS, FILL OUT THE READER SERVICE CARD IN THIS MAGAZINE

SOFTWARE

MAC-DOS
$84

DATA EAST
Drakkhen
Chamber of Sci-Mutant Princess
$34

DEVWARE
AntiVirus
$12

DR. T'S
Tiger's Club
$57

FTL
Dungeon Master
$24

GOLD DISK
Professional Page 1.3 **$157**
Professional Page Templates **$34**
Professional Draw 2.0 **$109**
Pro Page/Pro Draw Clip Art **$34**
Gold Disk Outline Fonts:
Video Series
Publisher Series
Decorative Series
Designer Series
$34

NEW

INOVATRONICS
Can Do!
$84

LATTICE
Lattice C 5.0 **$199**
Lattice C++ **$229**

MICROPOSE
Pirates
$27

NEWTEK
DigiDroid **$57**
DigiPaint 3 **$55**
DigiView Gold 4.0 **$119**

COMPLETE VIDEO SYSTEM
by Newtek
Includes:
- *Digiview Gold 4.0*
- *Copy Stand w/Lights*
- *Panasonic WV 1410 Camera w/Variable Lens*

Free UPS Blue Delivery in Continental U.S.

OUR PRICE $399!!!

Agent Matt F.B.I.

SOFTWARE

OXXI
Atalk 3 (Communications) **$59**
ANIMagic (Animation Editor) **$59**
Audiomaster II **$59**
Modeler 3D **$59**
Sonix **$47**
Video Titler **$91**

READY SOFT
Space Ace
$34

SIERRA ON-LINE
Hero's Quest
King's Quest IV
Leisure Suit Larry III
Police Quest II
Code Name Iceman
Colonel's Bequest
$34

SPECTRUM HOLOBYTE
Tetris
Welltris
$22

WALT DISNEY SOFTWARE
The Animation Studio **$99**

WORDPERFECT CORP.
WordPerfect v4.1 **$139**

ELECTRONIC ARTS

(Additional Titles in Stock)
It Came From the Desert II
F/A-18 Interceptor
$15

Hunt for Red Ocotber
$20

Pipe Dreams
$25

Keef The Thief
$15

688 Attack Sub
AD&D: Champions of Krynn
AD&D: Pool of Radiance
Fool's Errand
It Came From the Desert
Lords of the Rising Sun
Nuclear War
Populous
Star Flight
TV Sports Basketball
TV Sports Football
Unreal
Wings
$31

NEW

NEW

Cribbage King/Gin King
Gettysburg: The Turning Point
Loom
$37

NEW

ELECTRONIC ARTS

Their Finest Hour:
The Battle of Britain
Waterloo
$37

Deluxe Print II
$51

Deluxe Music Construction Set
$61

Deluxe Paint III
Deluxe Photo Lab
Deluxe Video III
$93

IMTRONICS

Hurricane 500 (68020/16 Mhz)
$349

Hurricane 2000 (68020/16 Mhz)
$289

Hurricane 2800 (68030/28 Mhz)
$599

Hurricane 2850 (68030/50 Mhz)
$2249

A2000 Accelerator Memory Board
$289

Catch what's on:
ADVANCED DUNGEONS & DRAGONS: A Pool of Radiance
by Electronic Arts; List $49.95
NOW $31
AGENT SEAN F.B.I.*

DISKETTES

SONY:
10-Pack Boxed **$12**
10-Pack Bulk **$9**
50-Pack Bulk **$42**
100-Pack Bulk **$79**

CSA

Mega Midget Racer
500/2000
20Mhz **$619**
25 Mhz **$699**
33 Mhz **$829**

IF YOU DON'T SEE IT, CALL US!

ORDERS ONLY:
1-800-438-2883
FAX: 1-619-274-2440
15% ($15/min.) restocking fee on refunded items only

Roger Coats
P.O. BOX 171466
SAN DIEGO, CA 92197

BARNEY

BARNEY'S DOG DAY SPECIALS

FREE DevWare "Disk of the Month" with all orders over $100

WE ACCEPT: VISA and MasterCard • Bank Wires • School Purchase Orders • Certified Checks • Money Orders • NO PERSONAL or COMPANY CHECKS
• Sorry, no shipping, handling, or insurance refunds • Not responsible for product compatibility • Prices subject to change without notice • NO C.O.D.s

*Experts Since 1985**

DEALS *of the Canine: Part II*



Suspect #2:

MISS LATTICE

when questioned about Barney's disappearance answered:

"Golly, Barney kept complaining of having Complete overload of DTV Videos in his System..."

HARDWARE

BASIC CABLE
Cable, Amiga 1000-Parallel Printer (8ft)
$11

Cable, Amiga 500-Hayes Modem (8ft)
$11

Cable, Amiga 500-Parallel Printer (8ft)
$11

EMCO
2-Way Parallel Switchbox
$19

2-Way Serial Switchbox
$19

3.5 Diskette Holder w/lock (holds 80)
$9

4-Way Parallel Switchbox
$24

4-Way Serial Switchbox
$24

EXPANSION SYSTEMS
A500 Baseboard
512K **$149**
1 Meg **$179**
2 Meg **$239**
4 Meg **$359**

*FREE SECOND DAY AIR on all EXPANSION SYSTEMS products

IDC
Adram 540

0K	$109
512K	$139
1Meg	$169
2 Meg	$229
4 Meg	$349

*FREE SECOND DAY AIR on all ICD products

MICROSPEED
AmTrac Tracball
$64

MIGRAPH
Migraph Hand Scanner
$319

NEXO
Super Hi-Fi Stereo Speaker
$119

PASSPORT
Mastertracks Pro
$269

Passport Midi Interface
$89

PRACTICAL SOLUTIONS
Cordless Mouse
$84

WE CARRY OVER 100's ITEMS NOT LISTED PLEASE CALL FOR COMPLETE CATALOG

HARDWARE

PROGRESSIVE
Baud Bandit 2400 Modem
$99
Baud Bandit 2400 MNP Modem
$139

READY SOFT
AMAX II (Macintosh Emulator)
$139

US ROBOTICS
Courier 2400 External Modem **$319**

Courier HST 9600 Baud External Modem **$619**

GREAT VALLEY PRODUCTS

A2000 Accelerator (68030/28Mhz)
$739

A2000 Accelerator (68030/28Mhz+68882)
$899

A2000 Accelerator 4 Meg Ram
$749

A3001 Accelerator (68030/28Mhz+68882)
4 Meg Ram
$1469

A3501 Accelerator (68030/33Mhz+68882)
4 Meg Ram
$1699

A3050 Accelerator (68030/50Mhz+68882)
4 Meg Ram
$2499

Hard Card 2
Controller Only **$179**
20 Meg HD **$499**
30 Meg HD **$549**
40 Meg HD **$549**
45 Meg HD **$549**
80 Meg HD **$799**
100 Meg HD **$829**

Impact 2000 8/0
Controller Only
$209
40 MegHD
$579
44 Meg Rmvble
$929
80 Meg HD
$829
100 Meg HD
$849

GREAT VALLEY PRODUCTS

Impact A500
20 Meg HD **$589**
30 Meg HD **$679**
40 Meg HD **$749**
45 Meg HD **$749**
80 Meg HD **$1,119**
100 Meg HD **$1,189**

Impact XC
Ext Case w/Power Supply
$229
44 Meg Removable HD
$949
150 MB Tape Backup
$879

SUPRA CORP.

Amiga 3.5 External Drive
$99

XP-SCSI Interface (Amiga 500)
$149

SCSI Interface w/Clock (Amiga 1000)
$189

Supra 2400 Baud External Modem
$99

ROGER'S SUPER SLEUTH DEAL

by Lattice Corp.

C Compilers

Lattice C 5.1.1
Complete Development System
List $300
OUR PRICE $189

Lattice C++ Compiler
List $300
OUR PRICE $229

SUPRA CORP.

Supra 2400 Plus (External Modem w/MNP)
$155

Supra 2400zl Internal Modem (Amiga 2000)
$124

AMIGA SupraDrive

500 XP 20 Meg	$569
500 XP 40 Meg	$679
500 44 Meg Rmvble	$969
500 80 Meg	$829
1000 40 Meg	$729
1000 44 Meg Rmvble	$1099
2000 40 Meg	$459
2000 44 Meg Rmvble	$819
2000 80 Meg	$669
2000 105 Meg	$719

AIMGA Supra Ram

500 512 K w/clock	$64
2000 0K	$119
2000 2 Meg	$239
2000 4 Meg	$349
2000 6 Meg	$459
2000 8 Meg	$579

WordSync SCSI Interface (Amiga 2000)
$109

*FREE SECOND DAY AIR on all SUPRA products

XETEC

FastCard Plus, Amiga 2000
SCSI Interface **$179**
Q40 w/SCSI **$569**
Q80 w/SCSI **$799**

FastRam 0K (for Amiga 500 or 1000 SCSI Interface)
$79

Fast Tape, 1 Amiga Tape Back-up
150E External **$699**
150I Internal (2000 Only) **$619**
60E External **$579**
60I Internal (2000 Only) **$489**

Fast Trak SCSI Interface
(specify 500 or 1000)
Enclosure Only **$319**
Jr, 20 meg w/enc. **$599**
Q40, 40 meg w/enc. **$709**
Q80, 80 meg w/enc. **$949**

Mini FastCard (Amiga 2000 SCSI Interface) **$99**

SCSI Interface (Amiga 500 or 1000)
$199

Stay tuned for Part III of "The Case of the Kidnapped Canine"

Be an F.B.I.* Special Agent at Anytime!
We are now open 24 hours a day/ 7 days a week for orders. And there are no modems or online services required! So now you can be a special agent on the Find Barney Immediately case by placing your order at anytime.

Roger Coats
P.O. BOX 171466
SAN DIEGO, CA 92197

BARNEY

Circle 248 on Reader Service card.

PRICE QUOTES & TECHNICAL SUPPORT
1-619-274-1253
8am - 5pm PST
Monday-Friday

Committed to value since 1985

• Dunn and Bradstreet Number Upon Request • Miss Lattice seems so innocent?–*Roger, A.K.A. Super Sleuth* • *F.B.I.–Find Barney Immediately

WE ACCEPT SCHOOL PURCHASE ORDERS • OVERSEAS SHIPPING IS OUR SPECIALTY * Continental U.S. only.

VISA MasterCard



WHAT'S NEW?

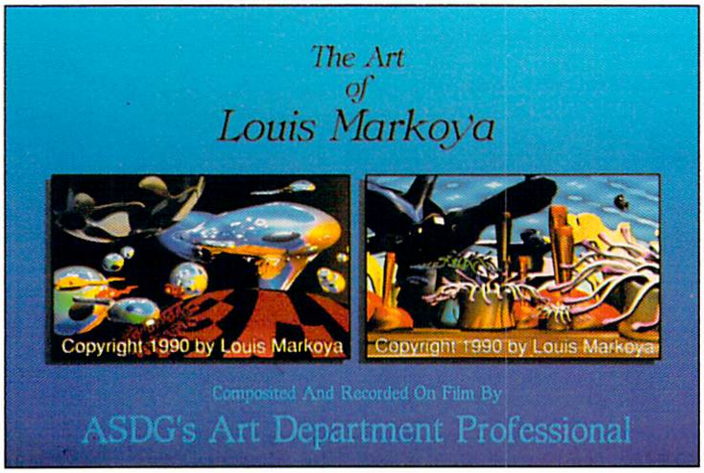
When, in Sir Walter Scott's words, "November's sky is chill and drear," you can warm your hands over some hot new titles.

Compiled by Jan Jackson

Image Makers

ASDG's HIGH-END image-processing and manipulation system shows off features above and beyond the original consumer version. **Art Department Professional** ($199.95) supports ARexx, imports and saves Amiga (and non-Amiga) image formats such as Digi-View 21-bit, Sculpt, Silver, GIF, PCX, Deluxe-Paint II, and MacPaint formats, and supports various imaging devices. With available add-on modules, you can save, import, or render images in 24-bit color, or up to 256 colors for non-Amiga formats.

Pro supports several devices, including Polaroid CI-3000 and CI-5000 film recorders, Black Belt System's HAM-E, Sharp's 24-bit color scanners, Digital Creations' DCTV, Impulse's FireCracker 24, and Mimetics' Frame Buffer. Other companion modules include the **Art Department Presentation Graphics Pack** ($129.95), which lets you combine business graphics with your images, and the **Art Department Professional Conversion Pack** which provides additional loaders and savers for Targa, TIFF, Pic2, and Rendition formats. (ASDG, 925 Stewart St., Madison, WI 53713, 608/273-6585.) *RS# 552.*



L. Markoya's work comes to you via ASDG's Art Dept. Pro.

The Plot Thickens

FROM CADVISION International, which brought you X-CAD Designer and X-CAD Professional, come **X-CAD 3D** ($499) and **X-CAD 3000**, a new generation of architectural design tools. Both packages read X-CAD Designer, Professional, and Taurus-version databases and read and write new X-CAD 3D symbol files and AutoCAD DFX files. In both programs, you can manipulate the 3-D viewport, draw line, arc, and string commands, plus select Layer and Layer Colour commands.

X-CAD 3000 shares the same features as Designer, with additional offerings such as multiple definable viewports, idents display manipulation commands, project and rotate commands, and extensive trim, stretch, and general editing commands. For the complete bill of fare, contact Cadvision (London, England, 071/603-3313) or American Software Distributors (RR 1, Box 290, Bldg. 3, Urbana, IL 61801, 217/643-2050). *RS# 502.*

Stormy Weather

THE **HURRICANE 530 Storm Bringer** boasts the ability to add up to 8 MB of 32-bit fast RAM to either your A2000 or A500. A Hurricane 530 including a 28-MHz 68030 processor retails at $1199. (Other configurations are available.) IMtronics promises the CPU and the FPU can run asynchronously from 16 to 54 MHz. Storm Bringer lets you switch between the 68000 and 68030, and its memory is accessible from either mode. In addition, the board can use any math coprocessor. (IMtronics: 12301 S.W. 132nd Court, Miami, FL 33186.) *RS# 505.*

AND THEN SOME

DRAW WITH THE whole enchilada—all 4096 colors—in hi-res (640 pixels wide) with **Macro Paint** ($139.95). In displaying scanned images on screen, Macro Paint changes the 16-color palette of each horizontal line in order to match the original as closely as possible. The package lets you read in standard 24-bit scanned or digitized IFF pictures and convert them to Macro Paint's 12-bit, hi-res format.

All you need to start your own electronic bulletin board is your Amiga, a modem, a phone line, **AmiExpress** ($169.95), and a few friends. Dial up, leave messages, read bulletins, transfer files, or just converse. By attaching more modems or terminals to your Amiga, you can turn your BBS into a multiline sys- ►



MEGA-MIDGET RACER
by CSA

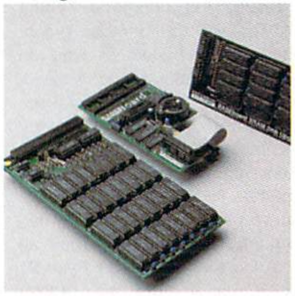
Are you spending too much time waiting? Application programs that are irritatingly slow can now be made BLAZING fast. Accelerate your entire Amiga computer system with the ONLY 68030 accelerator that fits the Amiga A500, A1000 and A2000. Accelerate NOW!

Our Price ***$1299***
25MHZ+882+2MB Dram

BASEBOARD & XRAM
by Expansion Systems

The BASEboard provides up to 4MB of memory in the A501 slot of your A500. The XRAMboard increases the total to 6MB. 100% software and hardware compatible. Works with all A500 versions including fat and fatter agnus chips. Battery/clock included.

Our Price
4 Meg Baseboard ***$359***
2 Meg XRAM ***$249***





3.5 EXTERNAL FDHD DRIVE
by Applied Engineering

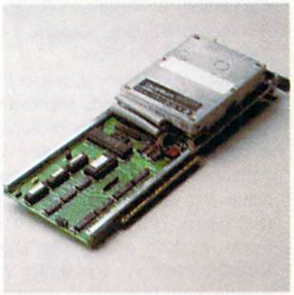
Applied Engineering's new density drive for the Amiga sets the new standard for 3.5" disk storage. The 1.52 MEG format makes running huge new applications and the new Amiga UNIX a breeze. Stop the disk swapping madness with the AE HD Drive™.

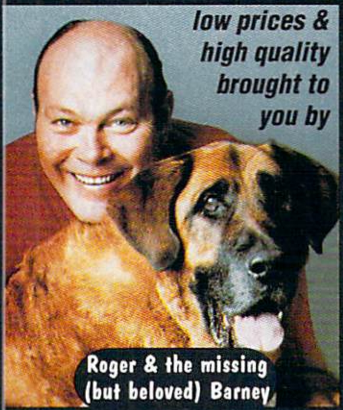
Our Price ***$189***

SUPRADRIVE
by Supra

The Supradrive is a high-performance, autobooting hard disk card that features the acclaimed WordSync SCSI Interface and reliable Quantum hard disks. The SupraDrive lets you use up to 6 ext SCSI devices including removable media.

Our Price
40MB/80MB/105MB
$459/$669/$719





Celebrity Squares

starring the hottest products in the Amiga Marketplace

HOW TO ORDER:
Orders only: 1-800-438-2883 • FAX: 1-619-274-2440
15% ($15/min. restocking fee on refunded items only)
Price quotes & technical support: 1-619-274-1253
8am-5pm PST Monday-Friday

OUR FINE PRINT: We accept the following methods of payment: • School Purchase Orders • VISA & MasterCard • Bank Wires • Certified Checks • Money Orders • NO C.O.Ds • Not responsible for product compatibility • Sorry, no shipping, handling, or insurance refunds • Prices subject to change without notice • We really appreciate your business!

Roger Coats

P.O. Box 171466
San Diego, CA 92197
committed to value since 1985

VISA MasterCard



(Actual Amiga Screen)

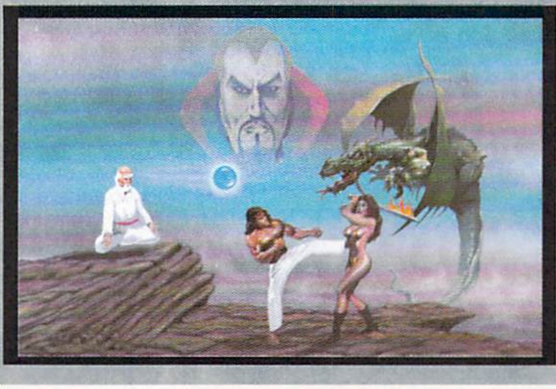
New!

by Avatar Consulting

Heart of the Dragon

A Live-Action Fantasy Adventure

Graphics so real, you'll forget it's only a game.



Dare to enter a world of magic and mystery brought to life in **4096 stunning colors**. Featuring character interactions, puzzles & treasures as well as full on arcade excitement! Photorealistic graphics, **HUGE** animated characters, stunning music & sound effects make ***Heart of the Dragon*** one of the hottest Amiga games ever!

Our Price ***$29***

tem. Transfer rates are limited only by hardware, and a remote shell makes maintenance easy. (Lake Forest Logic: 28101 Ballard Rd., Unit E, Lake Forest, IL 60045, 708/816-6666.) *RS# 511.*

A-Max II is ripe for the picking, according to ReadySoft. The Macintosh-emulator upgrade supports standard SCSI devices, such as the LaserWriter IISC and scanners, via compatible Amiga hard-drive controllers. The stepped-up version also works with Amiga accelerator boards having MMUs. (ReadySoft: 30 Wertheim Court, Unit 2, Richmond Hill, Ont., Canada L4B 1B9, 416/731-4175.) *RS# 514.*

Users of excellence!, rejoice! The latest version, 2.0, sports improved typing speed, a 140,000-word dictionary, and a comprehensive thesaurus. With **excellence! 2.0**, you can save your page-setup and print options as defined defaults, print graphics with text in NLQ mode, work in documents larger than available memory, and switch between portrait and landscape orientations in graphic and PostScript modes via a requester. The program also sorts highlighted paragraphs in ascending or descending order. The upgrade is available to registered users for $39.95. For a complete list of features, contact Micro-Systems Software (12798 Forest Hill Blvd., Suite 202, W. Palm Beach, FL 33414, 407/790-0770). *RS# 516.*

Have you heard? **A-Sound 2.0** ($29.95), a sound editor and effects generator, offers over 20 special effects. The program supports IFF, RAW, and ASF file formats and features 16 individual tracks with drag-range highlighting, as well as an on-screen data panel that updates in real time. Each ASF sound file is executable from both Workbench and CLI, and has its own built-in sound player. (Deltaware Products, 3148 Kingston Rd., Suite 202, Box 395, Toronto, Ont., Canada M1M 1P4, BBS:416/439-0493.) *RS# 521.*

PageStream users: Another version just emerged. **PageStream 2.0** features text tagging, batch kerning and hyphenation for a smoother text flow, as well as the ability to search and replace attributes. It supports AGFA-Compugraphic hinted-outline fonts and Adobe Type-1 IBM-format, and specifies angles of arcs and rotation in 1/100-degree increments. Other improvements include the ability to specify font sizes to 1/100-point increments, to print crop and registration marks to non-PostScript printers, to create precise specification for bleeds, and to move objects off or partially off the page. Larger document sizes and Bezier cubic curves are also part of the upgrade. (Soft-Logik: 11131 F. S. Towne Sq., St. Louis, MO 63123, 800/829-8608.) *RS# 509.*

Your system won't get wet when it hits the beach with modular hardware hailing from the West Coast. **The Bodega Bay**, a self-powered, fan-cooled, A500 expansion chassis, doubles as a monitor stand. The bay holds up to four standard, 100-pin, A2000-style cards, a $3^{1}/_{2}$-inch hard disk, and a floppy disk drive.

The chicly diminutive **Rodeo Drive** external floppy drive, measuring $7^{1}/_{4} \times 4^{3}/_{4}$ inches, is designed to run quietly and can be switched off to conserve power. Additional features include a pass-through connector for daisy chaining, and a one-year warranty covering parts and labor.

Configure the **Catalina Card**, a daughterboard RAM expansion system, in 2, 4, or 8 MBs. The Catalina Card hangs ten on the **Malibu Board**, a SCSI controller that you can fit with a standard $3^{1}/_{2}$-inch mounted hard drive and slide into an A2000 slot. (California Access, 130 Knowles Dr., Los Gatos, CA 95030, 408/378-0340.) *RS# 505.*

Videographers, you can enjoy coloring without feeling childish with **ColorboX**, a color-keying device. You can replace video signals with computer-generated signals and control the transition with a fader. ColorboX features three internal slots for I/O devices, adjustable-output signal saturation, a fader for color-key or genlock mode and several operating modes, such as Amiga thru, video thru, standard or invers genlocking, or standard or invers color keying. (IMtronics, 12301 SW 132nd Court, Miami, FL 33186, 305/255-9302.) *RS# 507.*

Don't forget your extra memory! The **BASEboard** ($159.95) stocks your A500 with a battery-backed clock and up to 4 MB of RAM; 6 MB if you add the 2 MB **XRAM** daughterboard. Both boards let you add DRAMs incrementally by 512K to suit your tasks and pocketbook. The BASEboard slides into the A501 slot and features Super Agnus compatibility. (Expansion Systems, 44862 Osgood Rd., Fremont, CA 94539, 415/656-2890.) *RS# 508.*

For a bit more expansion—32-bit, that is—enter **Mega Memory** ($349 unpopulated), a RAM board designed to work with Mega-Midget Racer, CSA's 68030 accelerator. You can add 1 ($449), 2 ($499), 4 ($999), or 8 MB ($1999) of DRAM above the Amiga's 9 MB address range to allow use of existing 16-bit memory. (CSA, 7564 Trade St., San Diego, CA 92121, 619/566-3911.) *RS# 509.*

Bars&Pipes owners, your horizons are expanding once again with the advent of two more add-ons. **MusicBox B**, with oodles of tools and accessories, includes an event scrubber, velocity modifier, chord player, key filter, Fostex MTC-1 Controller, and a disk-jockey, multisong loader, to name a few. **The Multi-Media Kit** helps you add musical accompaniment to your graphics and animations. Kit features include Smoose, for converting Bars&Pipes files to SMUS and back again; ARexx support; Bars& Pipes MIDI Player; and Cue Card, which uses MIDI events to cue animation and graphics, both via ARexx and keystroke macros. For the full orchestration, contact Blue Ribbon Bakery (1248 Clairmont Rd., Suite 3D, Decatur, GA 30030, 404/377-1514). *RS# 510.*

Take command of your system with **QPMA BASIC Programmer's Toolkit** ($29.95). The package provides graphics commands designed to work in Quad-Pixel Matrix Array mode, a standard developed by High Byte Software. With it, Amiga and AC-BASIC programmers can use a 320 × 200 resolution with 136 colors from a 8.39-million, pseudo-color palette. Taking advantage of the way the eye perceives colors under certain circumstances, QPMA creates an illusion of more colors. (High Byte, 91 Hillside St., Wilkes-Barre, PA 18702.) *RS# 511.*

If it's time to replace your system's old A501 card, the **M501-s Memory/Clock Expansion Unit** ($85) can fill the void. The card's most impressive feature, a cutoff switch, lets you deactivate the M501-s without removing the card. (MicroBotics, 1251 American Pkwy., Richardson, TX 75061, 214/437-5330.) *RS# 512.*

How would you like your A500 to change like a chameleon? By replacing your 68000 coprocessor with an SMT printed circuit board containing an 80286 16-bit, 8 MHz CPU, your Amiga can turn into an IBM AT MS-DOS compatible. **ATonce-Amiga** emulates the CGA, Hercules, Toshiba T3100, and Olivetti-G0317 graphic cards. With it, your Amiga mouse can function as a Microsoft mouse, and your Amiga clock as an AT clock. (Vortex, Falterstrasse 51-53, D-7101 Flein bei Heilbronn, West Germany, 0 71 31/50 88-0.) *RS# 513.*

Superbase 4 ($495), the next generation of power database-management software, is rolling out to the showroom floor. The latest version features networking support for Ethernet- or ArcNet-based LANs, improved processing speeds, an expanded Database Management Language, and an overhauled forms-creation tool that allows you to incorporate check boxes and various images as buttons. (Precision Software, 8404 Sterling St., Suite A, Irving, TX 75063, 214/929-4888.) *RS# 514.*

Based on the popular board game, **Pictionary** ($39.95) lets you play alone, with one to four individuals, or as teams. The object of the game is to guess a word based on drawings. In team mode, you sketch clues on screen for other team members who try to guess the word. The game comes with a drawing program that includes a Practice Draw mode. Your Amiga displays an on-screen board, automatically rolls the die, and keeps track of progress. (Broderbund Software, 17 Paul Dr., San Rafael, CA 94903, 415/492-3200.) *RS# 515.*

Desktop Video for Profit ($30) intends to show you how to earn money by producing and marketing videos using your Amiga. For beginners, **Desktop Video and the Amiga Computer** ($30), an introductory tutorial, covers setting up and using a desktop-video system to create your own video productions. (Group M Productions, 100 Bridge St., #27, Hot Springs, AR 71901, 501/321-1845.) *RS# 516.*

Grab your baton and step up to **AudioMaster III**, the latest incarnation of Oxxi's sound-digitizing program. A new utility, modeled after a CD player, stores and plays sounds. Other features include the ability to create multiple loops within a song, increased sampler support, real-time flange, and an upgraded oscilloscope.

A-Talk III, the recently refurbished telecommunications program, now boasts remote capabilities and supports the XPR protocol. For either of these upgrades, contact Oxxi (1339 E. 28th St., Long Beach, CA 90039, 213/427-1227). *RS# 517.*

You can use your RAM disk more efficiently, according to Marketron. The **Demand File Loader** ($50) automatically loads files from floppy to your RAM disk. The program resides in your search path, so that AmigaDOS will search the RAM disk first, then query the DFL, which looks in a special file. (Marketron Microcomputer Systems, 125 N. Allen Ave., #324, Pasadena, CA 91106.) *RS# 518.*

Integrate Pioneer LD-V2200 laser-disc player activity into your own applications with the **Laserdisc Controller Software Library** ($99.95). The library includes routines to open a serial port, initialize the player, write one of 40 player commands to the serial port, or read the player's response, detecting errors and the player's mode and operating parameters. (ACDA, 220 Belle Meade Ave., Setauket, NY 11733, 516/689-7722.) *RS# 519.* ■

FUTURE CLASSICS COLLECTION

Quotes from a few of our buyers . . .

"These games are great! Please make a sequel."

"Excellent graphics! Keep up the good work!"

"Nice game—a classic!"

"An excellent collection!"

"I own most games on the market and this is truly the best package available! Keep it up!"

"The game is great . . ."

"I'm very impressed with the options of play as well as the graphics . . ."

"Excellent head-to-head competition."

"Good games—do you have others?"

"Future Classics is fun!"

"My two children LOVE the games!"

"One of the best games yet. Looking for Vol. 2."

"I thoroughly enjoyed these games."

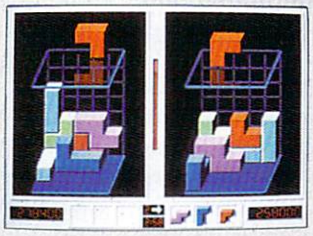
"How about Future Classics Collection Vol. 2! I LOVED all the options and the games."



Compete! Head-To-Head!



DISKMAN Computer viruses, magnets and bombshells challenge you at every turn! Can you back up your disks before all is lost?



BLOCKALANCHE The ultimate test of nerves and skill. One false move and your hopes for winning shatter like glass!



TANKBATTLE A classic battle of blitz: steer clear of blasts, keep missiles in stock, avoid obstacles, and capture the enemy's coat of arms.



DIET RIOT A nightmare of gargantuan proportions: can you skinny your way through tempting treats and monstrous morsels?

Five Exciting Games in One Action-Packed Collection!

Features unique "Split Screen" when using two joysticks for simultaneous Head-To-Head Competition. Or play "Split Screen" against a dynamic computer personality. Full-screen play for the single player. *Each* of three methods for *each* game features from *12 to 50 or more levels* for unlimited game play! Phenomenal graphics, original music and sound effects all combine to add more FUN to our games.



LOST 'N MAZE Towering, impenetrable walls, a wealth of treasures and obstacles — but it only looks impossible!

Available on IBM PC and Compatibles, Tandy and Amiga.

LIVE® STUDIOS INC.

Redefining Fun... and Games.

Visit your retailer or call 714 / 661-8337 for Visa / MC orders or mail credit card number and expiration date, check or money order for $39.95 IBM ($49.95 Amiga) + $3.00 ($10.00 outside the U.S.) handling to: LIVE Studios, Inc., 30151 Branding Iron Road, San Juan Capistrano, CA 92675. Allow 2-3 weeks for delivery.



The PD Prospector

"Yosemite Tim" has formed a posse to search the Amiga nets for them thar elusive utilities and applications.

Compiled by Tim Walsh

Following is a selection, culled from the major telecommunication networks, of utilities, applications and informative files that should prove helpful to the Amiga computing public. Filenames, numbers and library locations are listed for quick reference.

American People/Link

WHOISWHO.LZH (AmigaZone Section 1, file #24164) Revised and re-uploaded listing of the Amiga community movers and shakers who use PLink.

DFC4.LZH (AmigaZone Section 4, file #24021) Disk format and copy utility. Great for making multiple copies.

RRDISK.LZH (AmigaZone Section 4, file #24016) A recoverable RAM disk from the software company, The Other Guys. Supports up to 32 units and can be autobooted in Kickstart 1.3.

SELECTOR11.LZH (AmigaZone Section 8, File #23286) Small (8K) ARexx program run in conjunction with Baud Bandit. It launches an interface that allows you to click on files to be downloaded; then it downloads them unattended.

Harv Laser, Amiga sysop extraordinaire of PLink, finds DFC4.LZH a popular pick this month. It's a great utility for quickly making multiple archival copies of files, especially at user-group meetings.

CompuServe

MOVSSP.LZH (AmigaTech, Library 13) Moves the system stack pointer into fast memory, speeding up the Amiga quite noticeably in many cases.

ANTIFL.LZH (AmigaTech, Library 13) Reduces flicker on interlace and hi-res screens. The original German documentation was translated into English by CompuServe sysop Steve Pietrowicz.

MSDOS1.LZH (AmigaTech, Library 14) Sets up your Amiga drives as MS-DOS drives. Enter DIR DF0:, and you get an AmigaDOS directory; enter DIR MF0:, and you get a directory of an MS-DOS disk from that same drive.

POPUPM.LZH (AmigaTech, Library 14) Menus and sub-menus pop up at the cursor when you press the right mouse button. Popular among many CompuServe users.

According to CompuServe assistant sysop Betty Clay, the anti-flicker program (ANTIFL.LZH) has been the single most popular download for the past six weeks.

GEnie

LZHSHELL.LZH (File #8916) Relatively small (17K) Shell program for LHARC that adds a point-and-click interface. Includes documentation and BASIC source code.

NOISETRACKER2.0.LZH (File #8880) Version 2.0 of Noisetracker, a European music editor. Offers MIDI support.

WB2LOOK.LZH (File #8863) Makes your current version of Workbench look like, but not work like, Workbench 2.0

ADDTOOLS.LZH (File #8847). A small (5K) program by Steve Tibbett that allows you to make lists of items to be added to your Workbench 2.0 Tools menu.

The big news from GEnie isn't Amiga files; rather, it's saving money. GEnie's general manager Bill Louden announced that as of October 1, 1990, the $29.95 sign-up fee is eliminated. Furthermore, subscribers will be billed only $4.95 per month for access to GEnie news, GE Mail and a host of other Star Services. So, if you haven't joined GEnie yet, wait until October.

Prospector's Perch: The prospector shares some of his tips.

As in October's inaugural column, I list popular downloads from one network, while not mentioning their existence on the other networks. While not all of the programs listed on one network are available on the other two, most are, and usually under a remarkably similar filename.

Be forewarned that although this column is billed as a "public domain" forum, some versions of the files listed may actually be classified as shareware or freeware. In these cases, the authors expect and rightfully deserve some contribution if you find their programs useful. By supporting these creative, hard-working individuals, you're giving them an incentive to create more software, in turn making the entire Amiga community a happier world in which to live.

This column and the one in October focused mainly on utilities and applications available from the networks. We'll be covering more lively topics in future columns, along with other sources besides telecommunication networks for finding these PD gems.

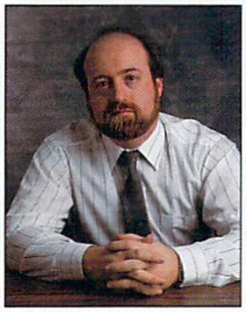
If you want to establish an account with any of the above networks, here are the voice numbers to call:

CompuServe: 800/848-8199
614/457-8650 from Ohio
American People/Link: 800/524-0100
GEnie : 800/638-9636

No modem? No problem! Send a SASE and $1 to Fred Fish to find out the availability of the above Amiga public domain programs on disk. Address correspondence to:

Fred Fish
1346 W. 10th Place
Tempe, AZ 85281

Next month: public-domain games, games, and more games! ■



HELP KEY

From lost commands to loss of sleep,

Dr. Lou has the sure cure.

By Louis R. Wallace

UPGRADE OR TRADE

Q: *I own an A2500 with the A2620 68020 board, and I was thinking about upgrading my system with the ECS, Workbench 2.0, and the A2630 030/882 board. · Should I buy the upgrade components or just go for the A3000? I also want to add a 68040 board when they become available. I can't sleep until I decide. What should I do?*

M. Manzano
APO, New York

A: Buying the 68030/882 board for your A2500 will most likely be cheaper than buying an A3000. You can then sell the A2620 board to an A2000 owner to recover some of your costs. Depending on which 030 board you get, you could end up with a machine with a significantly faster CPU than the stock 25MHz A3000.

Of course, you could just sell your A2500 outright. With the money from that sale and what you would have spent for a 68030 board, you could get the 25MHz A3000 already equipped with Workbench 2.0, the ECS, and a 68030.

As for the 68040 board, I suspect there will be comparable boards available for both the A3000 and the A2000. Because of the A3000's full 32-bit bus, however, an accelerated A3000 will run faster than a similarly equipped A2000, unless all your programs reside in 32-bit memory on the A2000's 68040 board. (Keep in mind that the more memory you add, the higher the price.) In all cases, if the Amiga has to access chip RAM (such as for animation), the A3000 will have a decided edge.

As you know, the decision isn't simple. The A2000 *is* a fully expandable Amiga and will continue to have a strong upgrade path. The A3000, however, offers even more possibilities for upgrading, and with the added features of the Zorro III bus, it will have options that won't be available for the A2000 series.

WHERE'S THE DOCTOR?

Q: *Help! When my disk became unreadable, a message appeared on the screen stating "Error validating Disk—Disk is Unreadable." The instruction "Disk structure corrupt use DiskDoctor to correct it" followed. What is DiskDoctor?*

R. Montalbano
Pomona, NY

A: DiskDoctor is a disk-recovery program that resides in your Workbench disk's C: directory. You can access it from the Shell (or CLI) by typing:

DISKDOCTOR DFn:

where n is the number of the drive with the corrupted disk.

Because many users have reported problems with DiskDoctor, it should *not* be used on a disk unless you have exhausted every other possibility. Try public domain programs first. I recommend FixDisk and DiskSalv, which are available on both local and major telecommunication systems, as well as in many user-group libraries.

BY ANY OTHER NAME

Q: *I keep hearing about a command called ALIAS that lets you create custom command names for CLI/Shell use. Where can I find it? It isn't in my C: directory or the Tools and Utilities drawers.*

J. Forte
Washington, DC

A: The ALIAS command is indeed a very useful feature of the Shell. It isn't a command you can enter from the command line; instead, it is executed on start-up in a special text file. This file, called Shell-Startup, is in the s: directory of your boot disk.

In Shell-Startup, you will see a list of ALIAS commands already defined for you:

```
ALIAS XCOPY COPY ;r] clone
ALIAS ENDSHELL ENDCLI
ALIAS PRO EXECUTE S:SPAT PRO-
  TECT [ ]
ALIAS SDATE EXECUTE S:SPAT
  SETDATE [ ]
ALIAS REN EXECUTE S:DPAT
  RENAME [ ]
ALIAS CLEAR ECHO "*E[0;0H*E[J"
ALIAS REVERSE ECHO
  "*E[0;0H*E[41;30M*E[J"
ALIAS NORMAL ECHO
  "*E[0;0H*E[40;31M*E[J"
```

The new commands (XCOPY, ENDSHELL, PRO, and so on) are merely shorthand for more complex, lengthy statements. They do not change the names of the files they reference; instead, they instruct the Amiga to run the standard command when you type the new name. With ALIAS, you can create powerful commands that are unique to your needs and system.

In the above list, the last three commands use escape sequences. For example, while AmigaDOS doesn't actually have a clear-screen command, the alias CLEAR uses some fancy escape codes to emulate it. Here are a few of my favorite ALIAS commands. Just for fun, try creating some of your own. All you need is a standard text editor that saves ASCII files.

```
ALIAS HEADER sys:SYSTEM/
  FORMAT
ALIAS HOME CD sys:
ALIAS AHELP TYPE sys:s/shell-
  startup
```

The last one (AHELP) will display your current set of ALIAS commands, just in case you forget what they are! ■

DevWare

$5.95 ea
1-9 Disks

$4.95* ea
10-24 Disks

$3.95* ea
25+ Disks

*** Anti-Virus Free on all orders with 15 or more disks!**

Public Domain Library

We are the **Offical Public Domain Library of Antic Amiga Plus**, we have been the **Offical PD library of Amiga World.** Find out why these magazines choose us! Each of our disks is packed with nothing but the best programs. The first two letters on each disk indicate the orientation of the disk; DD# intermediate to advanced - often contains source, WB# general interest - most programs can be run from the workbench, and FD# games and entertainment. Order our disk based catalog and receive a coupon for a **FREE** volume on your next purchase. We always use only SONY disks!

Featured Disk

WB53:Graphics- The disk contains C-light - The easiest to use raytracing we have seen to date. This one start our life as a full featured commercial product similar to Sculpt3d. Now it has been released to the PD, our gain! Raytracing programs can generate stunning highly reflective surfaces of realist objects. Also, sMovie - a full featured video text titler similar to ProVideo, Broadcast Titler. Great video scrolling, wipes, special effects, and more...

New Disks

FD37a & b:Tactical Games - Empire (2.2w) This game comes highly recommend. Now with a full featured graphic front end. Empire is a rich simulation of international politics, economics and war, which is played over a period of a few of months by 2 or more people. Players can run their countries from the normal Amiga keyboard, or via a modem at 300 to 2400 baud. Counts as two disks.

FD38:Games - Includes TinyBall - This tiny baseball game is very big in play action, CribbageMaster - a incredible cribbage program, Spades - a well done card came, ChineseCheckers - A computer version of this classic, Puzz - a slide piece puzzle game and construction set.

FD39a & b:Tobias Star Trek - This is a new completely different version of Star Trek than that found on FD12. This one was created by the german author Tobias. The game is in english, the instruction are currently in german (looking for a translation). Excellent!!! Counts as two disks. Requires 512k memory a 500, 2000 or Pal Amiga.

FD40:Arcade - MiddleEast - a timely arcade game of death an destruction set in Iraq, BackToTheFutureII - a very playable demo version of this soon to be released commercial game, City - a missile command clone.

WB54:Printing - This disk contains several routines to help with the chore of printing. Including Gothic - Finally a Banner printer for the PD, PrintStudio -a well implemented all-purpose printer-utility with a very comfortable graphic interface and many advanced features, Lila - with ease, print ASCII files to a PostScript printer, and many more.

WB55:Application - XCopyIII - a full featured disk copier, make backups of write protected disk with this one. RoadRoute - find the quickest route from one city to another, highway description included, Dairy - a diary program like "Dougy Howard M.D", Cal - a calendar program, Magman - a database tailored to maintain records on articles and publications, and more.

WB56:General Utilities - This disk contains FullView, a great graphic display, text viewer, and printer (see Amiga World, Oct. 90, pg. 116), plus many more.

WB57:Animation - This disk has several "Demo" style animations, Including, Blitter, Lolly, Sun5, vertigo, vortex, and xenmorph.

DD69:Advanced Utilities - SerNet and ParNet - Connect two Amiga's and share resources, MemMonitor - Similar to WFrag but greatly improved, Selector - put menus on your workbench screen, and more.

DD70:Game construction/parser tool - ADL (which stands for "Adventure Definition Language") is a programming language and run-time environment designed for the convenient implementation of Adventure-like text games.

Other Great Disks -

FD5: Tactical Games - BullRun - a Civil war battle game, Metro - you play the role of a city planner. Build wisely and your system will be a success, but poor planning will lead to disaster and financial ruin. Very very habit forming.

FD6: GAMES! - This disk is chocked full of games including; Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: PACMAN - This disk contains several pacman type games including; PacMan87, MazMan and Zonix.

FD9: Moria -. This has great graphic controls, multiple spells, similar to Larn and Hack Play time several weeks!

FD10: HackLite - A dungeon adventure game. Considered a must have classic. This is the second release of this game on the Amiga. Great Amiga graphic interface. Play time several weeks!

FD12A,FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arknoid/break out type game, Trix - a Qix type clone.

FD16: Strategy Games - Includes Diplomacy and Empros, both great conquer and rule multiplayer games similar in concept to Simcity and Populas. Also includes blackbox, hearts, and others.

FD17: Educational Games - This disk includes several games for the younger memebers including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce(3.72); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim.

FD24:Strategy Games and Others - Includes Dicey, a yathzee type clone, MM a master mind type clone, Flipper an othello type clone, China an great implementation of Shangi, CircutWars a challenging game based on electronics, and Etrain a computer based model train set construction set for the enthusiast.

FD26:Arcade Games - Marble_slide, truly this is a commercial quality game. Similar to a Lucas game named PipeDreams, excellent playablitly and entertainment, Mutants , a small version of the arcade game of the same name, also SuperBreakout a pong/arknoids type game.

FD29: Shoot'em up's - WWII - your the pilot of a world war II plane flying through enemy territory, you've just been spotted, good luck on you mission, SpKiller - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games! - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrnth - a well done text adventure game (like an infocom game), and MouseTrap - a 3d maze game.

FD32: Game Cheats and Flight Simulator - Includes an instrument flight simulator for a DC10. Also Cheats and Hints for the following games, Earl Weaver, Falcon, It c.f.t.d., SimCity, SpaceAce, Space Quest, Test Drive hd install, and Extract a program that gets all of the text from within a game (or other) which helps cheating easier. Also several football teams (.team files).

FD33: Arcade Games - Ffreddy a mario brothers type of game, Gerbils a target practice game, PipeLine a germany interpretation of Pipe Dreams, tron a light cycles version, and wetroids a wonderful version of asteroids with a hilarious twist.

FD35 Omega (v 1.3) - A new dungeon and outdoors adventure game in a similar vain as hack, rouge, and moria. This version is considerably faster and better that all previous versions. Play time several weeks or months.

WB4:Telecommumnication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily, Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - Last version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) Handshake is a Full featured VT52/100/102/220 terminal emulator.

WB6: Fonts #2 - ShowFont(4.0) This program allows you to view fonts. Over 30 large AmigaDos fonts (some up to 56pts)

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB10:Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and much much more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts off file minipulation. A real must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, with PrtDrvGen you can make your own.

WB15: Business - This disk contains a spreadsheet, a database, a project/time management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/schedular, a rolidex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: Word/Text Processors - This disk contains the best editors that we could find. Includes, WordWright(v6.2) a full featured word processor with mail merge and outlining capacity, Dme(v1.35) a great programers editor with strong macro features,TexED(v2.8) an enhanced Emacs type editor, and a spell checker.

WB20: General Interest - DiskSalv V1.42 a disk recovery program for all Amiga file system, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLookt gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of that image.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, BezSurf2 produces awesome pictures of objects one could turn on a lathe. Can also map iff image files onto any surface that it can draw. Now compatible with most 3D packages and VScreen makes a virtual screen anywhere, great for DTP .

WB25:Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any enter user global coordinate. . Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor, Lableprinter - Disk label printer with very powerful features.

WB27: Nagel - 26 Patrick Nagel pictures of beautiful women.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractels from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk, you'll love it!

WB33:Circuit Board Design - several terrific routines for the electronic enthusiast, Including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD cad program, now comes with predrawn common circuit components for insertion into schematics.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbenck screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphics.

WB38: Plotting and Graphics - Plotxy is the most powerful full featured plotting package. Used by many colleges and universities. A welcome addition to our library! Highly recommended. Plans - a incredibly well done Computer Aided Drafting program, very full featured. Tesselator - a program that helps generates fantastic looking, recursive M.C. Ecsher type pictures.

WB39: Music - Intuitracker is an german offer of an exquisitely well done program that allows you to play Amiga music as if from a CD like controls. Lets you strip out music from your favorite games or others and include them in your music library.

WB40: Music - "CD on a disk", 90 minutes of modern music on this well presented collection.

WB41: Music - MED an incredibly well done, full featured music editor. Create your own stunning music directly on your the Amiga. Similar to SoundTracker but better. Very powerful easy to use program.

DD47: Pascal - This disk contains everything needed to program in pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k(1.2) assembler, Blink linker.

DD51: Circuit Analysis - Aspice (2.3) A full featured program for electric circuit analysis.

DD52: Scientific - This disk contains several great programs and C source routines for the scientist and science student. Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source FFT - fft C source.

DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), Lharc(1.0), Lhwarp(1.03), Pkax(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excelent compression for IFF files.

DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide, and Conman (1.4). ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.

DD57: Advanced Utilities - Msh - like Cross-dos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and visa versa, IconJ - a new improved IconX clone, KillAgnus - disables 512k of chip ram, Also several utilities that improve your startup-sequence, plus 25 more programs.

DD62: Basic and Xscheme - Cursor - a full featured Amiga Basic compiler, sbasic and ftext - several wonderful routines to help in basic programers, and Xscheme - an interpreted object oriented programing language.

DD65 C Tutorials - Several well done tutorials on how to program the Amiga. Includes tutorials and working examples on Device drivers, IFF reads and writes ,Sound implementation, Arcade game design and implementation, Double Buffering, and others. A must have for Amiga Programers.

SONY Blank Disks:

10 for $11.90 (1.19 cents ea)
25 for $23.25 (.93 cents ea)
50 for $41.50 (.83 cents ea)
100 for $77.00 (.77 cents ea)

No shipping charge for on USA blank disks orders, Canada and Mexico add $.05 each, Sorry no foreign.

Virus

Anti-Virus

Now Only $19.95

☆☆☆☆ , INFO Sep 89

✓✓✓✓ , Amiga Resource Oct89

Anti-Virus(c) is not Public Domain

Please send me the following:
Enter disk id (Ex. DD17, FD5, WB3

[ ] Payment Enclosed
[ ] Please charge my
[ ] Visa
[ ] Master charge

Following day shipping in most cases. No shipping charges within USA, Canada add $.25 each, Foreign add $.50 per disk for air mail delivery. Payment in US funds. A minimum of $20.00 required on credit card orders.

Account #______ Exp___
Signature ______
Name ______
Address ______
City ______ ST____ Zip____

Total disks___x $____ each $____
Disked based catalog (add $2.50) $____
Anti-Virus (add $19.95) $____
CA residents add 7.25% sales tax $____
Sony Blank Disks# ____ $____
Foreign Shipping $____
Total Due $____

DevWare,11835 Carmel Mtn Rd., #1304-A8 San Diego, CA 92128
Orders Only! 800 879-0759 **Support & Questions** 619 673-0759

a8

AmigaWorld is a publication of International Data Group, the world's largest publisher of computer-related information. International Data Group publishes over 130 computer publications in more than 40 countries. Nineteen million people read one or more of International Data Group's publications each month. International Data Group's publications include: ARGENTINA's *Computerworld Argentina*; ASIA's *Asian Computerworld*; AUSTRALIA's *Computerworld Australia, PC World, Macworld*; AUSTRIA's *Computerwelt Oesterreich*; BRAZIL's *DataNews, PC Mundo*; CANADA's *Computer Data*; CHILE's *Informatica, Computacion Personal*; COLUMBIA's *Computerworld Columbia*; DENMARK's *CAD/CAM WORLD, Computerworld Danmark, PC World, Macworld, Unix World*; FINLAND's *Mikro PC, Tietoviikko*; FRANCE's *Le Monde Informatique, Distributique, InfoPC, Telecoms International*; HUNGARY's *Computerworld SZT, Mikrovilag*; INDIA's *Computers & Communications*; ISRAEL's *People & Computers*; ITALY's *Computerworld Italia, PC World Italia*; JAPAN's *Computerworld Japan, Infoworld, Publish*; KOREA's *Hi-Tech Information/Computerworld*; MEXICO's *Computerworld Mexico, PC Journal*; THE NETHERLANDS' *Computerworld Netherlands, PC World, AmigaWorld*; NEW ZEALAND's *Computerworld New Zealand, PC World New Zealand*; NIGERIA's *PC World Africa*; NORWAY's *Computerworld Norge, PC World Norge CAD/CAM, Macworld Norge*; PEOPLE'S REPUBLIC OF CHINA's *China Computerworld, China Computerworld Monthly*; POLAND's *Computers*; SPAIN's *CIM World*; *Communicaciones World, Computerworld Espana, PC World, AmigaWorld*; SWEDEN's *ComputerSweden, Mikrodatorn, PC/Nyhetherna, PC World, Macworld*; SWITZERLAND's *Computerworld Schweiz*; TAIWAN's *Computerworld Taiwan, PC World*; UNITED KINGDOM's *Graduate Computerworld, PC Business World, ICL Today, Lotus UK, Macworld U.K.*; UNITED STATES' *AmigaWorld, CIO, Computerworld, Digital News, Federal Computer Week, GamePro, inCider, InfoWorld, International Custom Publishing, MacWorld, Network World, PC Games, PC World, Portable Computing, PC Resource, Publish!, RUN, SunTech Journal*; USSR's *World USSR, Manager, PC Express, Network*; VENEZUELA's *Computerworld Venezuela, Micro Computerworld*; WEST GERMANY's *Computerwoche, Information Management, PC Woche, PC Welt, AmigaWelt, Macwelt*.

Manuscripts: Contributions in the form of manuscripts with drawings and/or photographs are welcome and will be considered for possible publication. *AmigaWorld* assumes no responsibility for loss or damage to any material. Please enclose a self-addressed, stamped envelope with each submission. Payment for the use of any unsolicited material will be made upon publication. All contributions and editorial correspondence (typed and double-spaced, please) should be directed to *AmigaWorld* Editorial, 80 Elm St., Peterborough, NH 03458; telephone: 603-924-0100. **Advertising Inquiries** should be directed to Advertising Offices, IDG Communications/Peterborough, Inc., 80 Elm St., Peterborough, NH 03458; telephone: 800-441-4403. **Subscription problems or address changes:** Call 1-800-525-0643 (in CO, 1-303-447-9330) or write to *AmigaWorld*, Subscription Dept., PO Box 58804, Boulder, CO 80322-8804. **Problems with advertisers:** Send a description of the problem and your current address to: *AmigaWorld*, 80 Elm St., Peterborough, NH 03458, ATTN.: Margot L. Swanson, Customer Service Representative.

List of Advertisers

* This advertiser prefers to be contacted directly

This index is provided as an additional service. The publisher does not assume liability for errors or omissions.

FYI

If you have any questions or concerns about advertisers in *AmigaWorld*, please contact: **Margot L. Swanson, Customer Service Representative, *AmigaWorld* Magazine, 80 Elm Street, Peterborough, NH 03458**. As a service to its readers, *AmigaWorld* will periodically publish the names of companies who are having difficulties meeting their customer obligations or who have gone out of business. Through our customer service representative, *AmigaWorld* assists readers with problems they may have with advertisers. However, *AmigaWorld* does not assume any liability for advertiser's claims. Readers are advised to contact *AmigaWorld* before dealing with these companies: **LightSpeed Distribution**; **Computer Mart**. **Applied Ingenuity**, **C Ltd.**, and **Ingenuity, Inc.** are no longer viable corporations.

M.C.S. WE DON'T CLAIM TO HAVE THE LOWEST PRICES ON AMIGA . . .

3.5 DS/DD 49¢ 100 LOT QTY. 69¢ (10)

WE PROVE IT!
THINK YOU FOUND A GOOD DEAL IN THIS MAGAZINE? OURS WILL BE BETTER!

SUPRA 2400 EXTERNAL *$99 LTD. QTY.

- Star Amt(5yr. War) 89*
- Baud Bandit 99*
- 9600 HST 619
- Supra 2400ZI 114
- Baud Bandit Lvl.5 .... 140*

*If you purchase a Modem Cable

MASTER 3A $99

- CA Access 119
- A.I.R. Drive 119
- Twin Drive 225
- Supra 3.5 Dr. Ext 89
- Master 5A(5.25) 180
- A2000 Internal from98

MICROBOTICS 512K A500 $65

Or Lower To Beat Competition

GVP 28 MHZ 68030 $719

- HC/0 .... $158
- HC2/0 .... $178
- GVP8/0 .... $198

CITIZEN GSX 140 $310*

- Panasonic 1124 .... Call
- Pasasonic 1180 .... 174*
- Star Rainbow .... Call

*If you purchase w ribbons

SUPRA XP SPECIAL! NOBODY BEATS OUR HARD DRIVE PRICES

	Drive Only	Trump 2000	Hard Frame 2000	Xetec FI2000	Xetec FC500 FC1000	Trump 500	GVP 2000	Supra 2000
20 MG ST-125N	234	388	482	438	598	458		
30MG ST-138N	255	408	503	447	618	478	495	462
49MG ST157N-1	318	478	566	478	688	548	535	527
80MG ST296N(5.25)	378	538	626	589	748	677	655	637
80MG ST1096N	434	599	682	667	857	737	715	697
Quantum 410	368	528	618	520	710	595	595	577
Quantum 80	597	756	845	720	900	837	795	777
Quantum 105	678	828	926	805	986	881	895	877

MISC

- Panasonic 1410 185
- Digiview 4.0 125
- Panasonic 1500X 300
- Jin Mouse 48
- Minigen 188
- EPYX 500 J.S. 9.95
- Copystand 60
- Migraph Scanner 319
- Optical Mouse 80
- Hurricane Boards from599
- SYQUEST 44mg $648
- Exp 8000(500/8MG) .... Call

FLICKER FIXER $369 LTD QTY

- Super Gen 649
- Scanlock 737
- Framegrabber 540

PANASONIC

Video Package
WV1410 Camera-16mm Lens
Digiview Gold 4.0 Copy Stand W/Light
$399 DELIVERED!

Supra 2MG(2000) . . . $249
Adram 2mg(2000) . . . $259

MICROBOTICS 2 MG 8-UP $299

4MG-429 6MG-555 8MG-685

INBOARD 500/1000 512K $249

1MG-275 1.5MG-310 2MG-365

STARBOARD II 1000 512K $249

1MG-275 2MG-398

Adram 2mg (500) . . . $250
Basebrd 2mg(500) . . . $260

ABACUS BOOKS
- Amiga Dos Quick RCF ... $8
- Adv. Sys. Rog. Gde ... $27
- Desktop Video Gde ... $17
- Amiga Graph in/out ... $27
- Disk Drives In/Out ... $24
- Amiga Tricks & Tips ... $18
- Amiga C Adv. ... $25
- Amiga Dos Inside/Out ... $17
- Amiga Machine Lang ... $17
- Amiga C for Beginners ... $15
- Amiga Sys prog. Guide ... $27
- Amiga Basic Inside/Out ... $20
- Amiga for Beginners ... $15
- Amiga 3D Graphics ... $17
- More Tricks & Tips ... $17

ABSOFT
- AC/Basic 1.3 ... $117
- AC/Fortran ... $180

ACCOLADE
- Hardball II ... Call
- Harmony ... $27
- Heat Wave ... Call
- Super Cars ... $14
- Third Courier ... $30
- European Challenge ... $14
- Day of the Viper ... $30
- Jack Nicklaus Crs 2 ... $14
- Blue Angels ... $30
- Muscle Cars ... $14
- Cycles ... $30
- JackNicklaus Chp Crs. ... $14
- Super Cars ... $14
- Shoot em-up Const. Kit ... $15
- California Challenge ... $14
- Famous courses Vol 2 ... $14
- Jack Nicholas Golf ... $30
- Test Drive Ii ... $30

ACTIVISION
- Future Wars ... Call
- Ghostbusters Ii ... Call
- Fighter Bumper ... $36
- Beyond Dark Castle ... $21
- Neuromancer ... $24
- Battlechess ... $30

ADDISON-WESLEY
- Hardware REF ... $18
- Includes LIB & DEV ... $28
- Includes & Auto Docs ... $27ll

AEGIS
- AniMagic ... $84
- Audiomaster 2.0 ... $60

AMIGA
- Logo ... $60
- 1.3 Enhancer ... $24

ANTIC
- Design Disks ... $21
- Phasar 4.0 ... $54

ARTWORX
- Daily Dbl Horse Race ... Call
- World Snooker ... $21
- Bridge 5.0 ... $21
- Centerfold Squares ... $18
- Linkword Languages ... $18
- Strip Poker 2 ... $24

AVANTE GARDE
- Benchmark Module 2 ... $120

BAUDEVILLE
- Award Maker Plus ... $30

BETHESDA
- Hockey League Sim ... $24
- Dragons Lair II ... $42
- Wayne Gretzky Hockey ... $30

BLUE RIBBON BAKERY
- Bars & Pipes ... $169

BRITANNICA
- Designasaurus ... $30

BRODERBUND
- Carmen-Europe ... $30
- Typhoon Thompson ... $30
- Wings of Fury ... $24
- Carmen USA ... $30
- Simm City Terrain ... $12
- Omniplay Horseracing ... $30
- Shufflepuck Cafe ... 24
- Archipelagos ... $24
- Omniplay Basketball ... 30
- Carmen SanDiego World ... $27
- Sim City ... $27

BROWN WAGH
- Pen Pal ... $88

BYTE BY BYTE
- Sculpt 3D XL ... 100
- Sculpt Animate 4D ... 390
- Sculpt/Animate 4D Jr ... $90

CENTAUR SOFTWARE
- D.U.D.E. ... $30
- World Atlas ... 36
- B.A.D. ... $30

CENTRAL COAST
- Quarterback Tools ... $Call
- MAC to DOS ... Special
- DOS 2 DOS ... $33
- Quarterback ... $42

CINEMAWARE
- TV Sports Basketball ... $32
- It came from the desert ... $32
- King of Chicago ... $15
- Lords of Rising Sun ... $32
- S.D.I. ... $15
- Sinbad ... $15
- T.V. Sports Football ... $32

CONSULTATION
- Cross Dos ... $18

DATA EAST
- Chamber Sci. Mutant ... $27
- Super Hang on ... $27
- ABC Mon Night F.ball ... $30
- Drakkhen ... $36
- Guerilla Wars ... $27
- Untouchables ... $27
- Batman-The Movie ... $27
- Bad Dudes ... $27
- Rambo III ... $21

DIGITEK
- Extra Courses ... $12
- Hole 1 Mini Golf ... $24

DR. T MUSIC SOFTWARE
- Copyist Apprentice ... $60
- Copyist Pro ... $168
- Coypist DTP ... $195
- Tiger Cub ... $60
- KCS 3.0 ... $165
- KCS Level II 3.0 ... $225
- K.C.S. ... $150
- Midi Recording Studio ... $42

EASEWARE
- Home Builders Print ... $71
- Home Builders Cad ... $120
- Home Builders Ch ... $60

ELECTRONIC ARTS
- Might and Magic II ... $38
- Budd Kan ... $26
- Dragon Force ... $32
- F-16 Combat Pilot ... $32
- Tunnels of Armagedon ... Call
- Aquahunt ... $26
- Waterloo ... $38
- Turbo Outrun ... $32
- 688 Attack Subs ... $32
- Altered Beast ... $32
- Nuclear War ... $32
- Hound of Shadow ... $26
- Life and Death ... $33
- Deluxe Video III ... $92
- Populos Data Disk ... $20
- Demons Winter ... $26
- Populous ... $32
- ChessMaster 2000 ... $29
- Commissioners Disk ... $14
- Deluxe Music ... $62
- Deluxe Paint III ... $92
- Deluxe Photo Lab ... $92
- Deluxe Productions ... $122
- Double Dragon ... $26
- Earl Weaver ... $32
- FA/18 Intercepter ... $32
- Mavis Beacon ... $32

FREE SPIRIT
- Doctor Ami ... $30
- Barney Bear ... $21
- Dragon Scape ... $24
- Ami-Alignment ... $30
- Planet of Lust ... $24
- Securities Analyst ... $48
- Sex Vixons from Space ... $24

FTL
- Dungeon Master ... $24

FULLER COMPUTER
- Project D ... $30

GOLD DISK
- Prof. Draw 2.0 ... Call
- Compugraphic Fonts ... $120
- Pagesetter II ... $78
- Prof. Page 1.3 ... $167
- Advantage ... $114
- Structured Clip Art ... $Call
- Transcript ... $42
- Pro Page Templates ... $36
- Pro Draw Clip Art ... $36
- Desk Top Budget ... $42

IMPLUSE
- Vo-Rec I ... $116
- Turbo Silver 3.0 ... $112

INOVATRONICS
- Can do ... $84

INNOVISION
- Broadcast Titler ... $167
- Video Effects 3D ... $113

KARA
- Headlines ... $48
- Anim Fonts ... $30
- Subheads ... $42
- Headlines 2 ... $42

KONAMI
- Teenage Mutant ... $27
- Blades of Steel ... Call
- Rush N' Attack ... $24
- Contra ... $24
- Blades of Steel ... $27
- Teen Mnt Ninja Turtles ... $27
- Double Dribble ... Call

LATTICE
- Lattice 5.0 ... New Price

LEISURE GAMES
- Risk ... $24
- Clue ... $24
- Monopoly ... $24
- Scrabble ... $24

LUCAS FILM
- Their Finest Hour ... $38
- Indy Jones-Action Game ... 27
- Indy Jones-Adven. Game ... 32

MANX
- Aztec Prof V 5.0 ... $119
- Aztec Dev. V 5.0 ... $177

MELBOURNE HOUSE
- Shark Attack ... $24
- Double Dragon Ii ... $24
- NY Warriors ... $30
- World Trophy Soccer ... $Call

MICROILLUSIONS
- Data Disks ... $12
- Discovery Math or Spell ... $24
- Faery Tale ... $Call
- Music X ... $175
- Photon Paint II ... $90

MICROMASTER
- Your Family Tree ... $30

MICROPROSE(Microplay)
- Stunt Track Racer ... $24
- Pirates ... $27

MICROSCREEN
- **Pro Football Sim. ... $24**

MINDSCAPE
- Mystery 3 Pack ... $32
- Colony ... $32
- Harley Davidson ... $32
- Limited Collector Ed. ... $32
- Shinobi ... $32
- Star Trek V ... $32
- Super Bike Sim. ... $26
- Gauntlet II ... $32
- Deja Vu II ... $32

MSI
- Fat Tracks ... $34
- Raw Copy ... $36

M.S.S.
- Online! Platinum ... $58
- Excellence ... $158
- Scribble Platinum Ed. ... $87
- Works Platinum Ed. ... $167

NEW HORIZONS
- Pro Fonts 1 or 2 ... $21
- Pro Write 3.0 ... $105

NEWTEK
- Digiview Gold 4.0 ... $125
- Digi Paint III ... $60
- Digidroid ... $62

OCEAN
- F-29 Retaliator ... $30

ORIGIN SYSTEMS
- Quest for Clues ... Call
- Space Rogue ... $30
- Omega ... $30
- Times of Lore ... $24
- Ultima IV ... $36

OTHER GUYS
- Synthia Professional ... 150

OXXI
- A-talk 3 ... $60

PASS PORT DESIGNS
- Master Trax Pro ... Call

PRECISION SOFTWARE
- SuperBase Personal ... $46
- SuperBase Personal II ... $87
- SuperBase Pro. 3.0 ... $188
- Super Plan ... $90

PROGRESSIVE
- Framegrabber V2.0 ... $60
- Introcad Plus ... $90
- 3D Professional ... Call
- Ultra Design ... $240
- Dunlap Utilities ... $48
- Baud Bandit ... $30
- Disk Master ... $30
- Pixmate ... $42

PSYGNOSIS
- ChronoQuestII ... $30
- Infestation ... $24
- Triad II ... $24
- Shadow of the Beast ... $24
- Blood Money ... $24
- Baal ... $18
- Ballistix ... $21
- Menace ... $18

READY SOFT
- Space Ace ... $36
- Amiga-Tosh Drive ... $190
- A-Max Pkg Price ... $Special
- A-Max ... $120
- Dragon's Lair ... $36

RIGHT ANSWERS GROUP
- Director ... $42
- Director Tool Kit ... $24

SAXON INDUSTRIES
- Saxon Publish ... $267

SHERIFF SYSTEMS
- Pro Video Gold ... $167
- Pro Video Post ... $210

SIERRA
- Leisure Suit Larry 3 ... $30
- New York Warriors ... $30
- Manhunter Sun Fun ... $30
- Colonel's Bequest ... $36
- Conquests of Camelot ... $36
- Kings Quest IV ... $36
- Police Quest II ... $36
- Hereos Quest ... $36
- Spacequest III ... $Call
- Leisure Suit Larry II ... $30

SOFTLOGIC
- Page Stream ... $120
- Page Stream Fonts ... $24

SPECTRUM HOLOBITE
- Falcon Mission Disk ... $15
- Falcon ... $30
- Tetris ... $21

SSI
- Rings of Medusa ... $21
- Sword of Aragan ... $26
- Dungeon Master Ast.1 ... $20
- Dungeon Master Ast.2 ... $20
- Champions of Krynn ... $32
- Dragons of Flame ... $26
- Pool of Radiance ... $32
- Red Lightning ... $38
- Hillsfar ... $32
- Star Command ... $32
- Heroes of the Lance ... $26

SUBLOGIC
- UFO ... $30
- Scenery Disks ... $18

TAITO
- Target Renegade ... $21
- Sky Shark ... $21
- Rastan ... $21
- Puzzmic ... $21
- Operation Thunderbolt ... $21
- Ninja Warriors ... $21
- New Zealand Story ... $21
- Chase HQ ... Call
- Rampage ... $24
- Bubble Bobble ... $21
- Operation Wolf ... $21
- Renegade ... $21

TITUS
- Dark Century ... $27
- F40 Pursuit ... $27
- Wild Streets ... Call
- Night Force ... $27

UNISON WORLD
- Art Glry 1 & 2 Combo ... $24
- Fantasy ... $18
- Fonts & Borders ... $21
- Printmaster Plus ... $30

WILLIAM HAWES
- Arexx ... $30

WORD PERFECT INC.
- Library ... $78
- Word Perfect ... $150

ZUMA
- TV Text Pro ... $99
- TV Show 2.0 ... $60

INSTRUCTIONAL VIDEO TAPES
- Video Titling ... $30
- Digitizing for Effect ... $30
- Color Cycling Animation ... $30
- Hard Drives-Cmpl.GDE ... $38
- World of Turbo Silver ... $23
- Using Deluxe Paint III ... $23
- Direct or Tutorial ... $30

EXTENDED SERVICE PLAN NOW AVAILABLE ON ALL HARDWARE!
THEY ALSO BACK THE AM/EX BUYER PROTECTION PLAN!

Now With 1 Yr. Warranty
AMIGA 500 ★ 2000 1084
SPECIAL PRICING

SONY 3.5 DS/DD **79¢** 100 Lot Qty.

Orders Only: M-F 10-8 Sat 10-6
800-433-7756
In Michigan **313-569-1190**

Customer Service
10-5PM EST (M-F)
313-569-4428

FAX
313-427-7766

Michigan Residents–Please Add 4% Sales Tax!
No Surcharge for MC/VISA/DISCOVER

M.C.S.

Send Mail Orders To: **MCS.** 29305 Southfield, Southfield, MI 48076

Sorry no walk in traffic

All returns must have RA #. Merchandise found defective will be repaired or replaced. We do not offer refunds for defective products or for products that do not perform satisfactorily. We make no guarantees for product performance. Any money back guarantee must be handled directly with the manufacturer. Call for shipping & handling info. Prices subject to change without notice. Shipping & Handling are not refundable.

NO REFUNDS

Returned products subject to a 20% restocking fee:
29305 Southfield, Southfield, MI 48076
We cannot guarantee compatibility

DEALER INQUIRIES INVITED

Circle 44 on Reader Service card.

InfoMarket

WANNA WORK IN VIDEO?

YOU CAN DO IT!

YOU'VE READ ABOUT IT MONTH AFTER MONTH, BUT HOW CAN YOU GET INTO THE VIDEO BUISINESS?
WHAT WILL IT COST?
HOW CAN I USE MY AMIGA TO IT'S FULLEST WITH VIDEO?

ALL OF THESE QUESTIONS ARE ANSWERED IN THIS INFO-PACKED VIDEOTAPE COMPILED BY A WORKING HOLLYWOOD PRODUCTION COMPANY. THE TAPE LETS YOU KNOW WHAT HARDWARE YOU NEED, WHAT SOFTWARE IS THE BEST, AND MOST IMPORTANTLY HELPS YOU CHOOSE WHICH LEVEL OF VIDEO PRODUCTION IS RIGHT FOR YOU!
WE ARE CONFIDENT THAT THE HINTS, TIPS AND TRICKS WILL MAKE YOU PROFITABLE!

ONLY $19.95 + $2.50 S&H
"ANY 2 OF OUR INSTRUCTIONAL VIDEOTAPES FOR JUST $34.95"

Call Us: (213) 874-7404
Fax Us: (213) 874-9460
WE ACCEPT VISA/MASTERCARD CHECK/M.O./C.O.D.

OR SEND YOUR ORDERS TO:
MICHAELANGELO PRODUCTIONS
1755 EL CERRITO PLACE #403
LOS ANGELES, CA. 90028

Circle 300 on Reader Service card.

20 DISKS FOR UNDER $90!

20 DISKS OF THE MOST BEAUTIFUL ANIMATIONS AND BORDERS EVER CREATED FOR VIDEO, ALL UTILIZING COLOR ZERO SO YOU CAN ACHIEVE BROADCAST QUALITY VIDEO EFFECTS!
TURN BORING SEGMENTS INTO THE MOST EXCITING VIDEOS YOU HAVE EVER PRODUCED!

WITH 20 DISKS TO CHOOSE FROM YOU WILL NEVER HAVE A HARD TIME FINDING THE EFFECT THAT IS JUST RIGHT FOR YOUR SCENE.

INCLUDES IMPORTANT VIDEO UTILITIES AND REFERENCE CHARTS. THERE IS ALSO AN IN-DEPTH MANUAL COVERING EVERY ASPECT OF EACH AND EVERY EFFECT!
PLUS: A VIDEO COVERING ALL OF THE EFFECTS, FREE OF CHARGE!

ONLY $89.95
PLEASE ADD $6.00 FOR SHIPPING
"IF YOU USE YOUR AMIGA WITH VIDEO, YOU CAN'T DO WITHOUT THIS SET OF SOFTWARE!"

Call Us: (213) 874-7404
Fax Us: (213) 874-9460
WE ACCEPT VISA/MASTERCARD CHECK/M.O./C.O.D.

OR SEND YOUR ORDERS TO:
MICHAELANGELO PRODUCTIONS
1755 EL CERRITO PLACE #403
LOS ANGELES, CA. 90028

Circle 300 on Reader Service card.

HEY DIGITIZERS!

IMPROVE YOUR IMAGES!
GET THE RESULTS YOU WANT!!
MAKE MONEY WITH YOUR DIGITIZER!!!
ACHIEVE PROFESSINAL RESULTS USING THE KEY TECHNIQUES NOT EVEN COVERED IN THE MANUAL!

SECRET SOFTWARE TIPS PREVIOUSLY UNMENTIONED ARE ALL COVERED IN DETAL, GIVING YOU THE PROFESSIONAL EDGE.
THIS INFO-PACKED VIDEOTAPE COVERS EVERY ASPECT OF PROFESSIONAL DIGITIZING, AND HOW TO PROFIT FROM THIS KNOWLEDGE!

ONLY $19.95 + $2.50 S&H
"ANY 2 OF OUR INSTRUCTIONAL VIDEOTAPES FOR JUST $34.95!"

Call Us: (213) 874-7404
Fax Us: (213) 874-9460
WE ACCEPT VISA/MASTERCARD CHECK/M.O./C.O.D.

OR SEND YOUR ORDERS TO:
MICHAELANGELO PRODUCTIONS
1755 EL CERRITO PLACE #403
LOS ANGELES, CA. 90028

Circle 300 on Reader Service card.

Authorized Amiga Service Center

Special offer on the Enhanced Chip set and new 2.0 Operating system software. At ad time pricing is still tentative so call for detailed information and pricing.
****Special offer — We will install the new ECS for free with the purchase of the chips and software ($75.00 value). All you have to do is pay shipping.
Amiga 500 repair — $124.95 + shipping * Amiga 2000 repair — $189.95 + shipping * We also do all warranty repairs on Amiga systems bought from Authorized Dealers. Our turn around time is 1 to 3 days on ECS installation and repairs. Other Specials:

AmigaVision	$ 99.00	SuperGen 2000S genlock	$1769.00
A2000 Power Supply	143.00	Supra External Drive	119.00
8520 Chip	16.50	Supra 501 RAM Exp.	85.00
Fatter Agnus Chip	90.00	Heavy Duty A500 Pow Sup.	119.00
Janus Library 2.0	27.00	All Supra 5000XP HD in stock	Call
A500 Keyboard	112.00	All RAM Chips in stock	Call
A2000 Keyboard	118.00	All Baseboard config in stock	Call
1.3 Kickstart ROM	29.00	All Quantum Drives in stock	Call

Many other products in stock including over 600 software titles. If you are in the area please stop by to see the complete line of Amiga computers.

Software Hut, Inc.
2534 S. Broad St.
Philadelphia, PA 19145

To order call (800) 848-0079
In PA or for information call (215) 462-2268

* Please call for complete details on these repairs and to get an authorization number.

Circle 261 on Reader Service card.

BRIDGEBOARD USERS

A low cost, simple solution that enables the PC Emulator to speak!

NOW YOU CAN HAVE SOUND ON THE 2088 OR 2286 BRIDGEBOARD!!!

These easy-to-follow instructions allow you to build-it-yourself with less than $5.00 in parts and install-it-yourself in less than 15 minutes!!!

For $9.95 you receive
COMPLETE ASSEMBLY INSTRUCTIONS
INSTALLATION DIAGRAMS
OPTIONAL PARTS INFORMATION
HINTS & TIPS

Send check or money order for $9.95
(TX res. add 7% sales tax) to:

MTE
13120 Tahoe Drive
Dallas, Texas 75240

Circle 307 on Reader Service card.

MEMORY FOR LESS

D RAM BLOWOUT!!

256 x 1 150n.s	$ 2.00 ea.
256 x 1 120n.s	2.50 ea.
1 meg x 1 100n.s.	8.00 ea.
1 meg x 1 80n.s.	8.75 ea.
256 x 4 70n.s.	11.00 ea.
256 x 4 80n.s.	9.00 ea.
256 x 4 80n.s. zips	11.00 ea.
256 x 4 100n.s. zips	10.00 ea.
64 x 4 100n.s.	30.00 ea.
Paula / Denise	56.50 ea.
FATTER AGNUS	**95.00**
1.3 Kickstart ROM	**28.00**

For Amiga 3000
1 x 4 Static Zips........56.95
256 x 4 80n.s Static Zips 12.00

CPUs

68000 16 Mhz	$35.00
68010 8/10 Mhz	35.00
68020 16 Mhz	75.00
20 Mhz	109.00
68030 25 Mhz	289.00

Math Co's

68881 12 Mhz	69.00
16 Mhz	75.00
20 Mhz	69.00
68882 25 Mhz	249.00
33 Mhz	349.00
All Crystals	10.00 ea.
1 meg x 8 Simm	2 for 149.00

We ship APO/FPO & Foreign
Call for Fax charges.

SPIRIT BOARDS	ØK	½ meg	1 meg	1½ meg	2 meg
IN 1000	$199	$215	$230	$245	—
SIN 500	$199	$235	$270	$309	$319
X-RAM 500/1000	$219	—	—	—	$339
4 meg Trapper	$119	$159	$189	$219	$249

MEMORY WORLD
2476 CROYDEN COURT
BENSALEM, PA 19020
ATTN: AMIGA DEPT.

215-741-6225
FAX 215-741-6229
Add $3.00 S&H Add $4.00 COD
VISA / MC / CHECK / COD

Circle 287 on Reader Service card.

Ham It Up! (v. 1.02)

- Sixteen 256-color charts with RGB/CMY values take the guesswork out of color selection
- Expanded "Blender" blends & saves more color palettes fast!
- Works with DigiPaint™ and DeluxePaint™
- *Introducing... New!* **HamItUp! Clip Art** Backgrounds, gradients, textures created with HamItUp!'s smooth blends.



Displays and prints all 4096 Amiga colors!

$29.95* for HamItUp! Clip Art, Vol.1 (3-disk set)
$39.95** for HamItUp! (both include U.S. shpg.)
Call or send a check or money order to:
▲ Delta Graphics ▲ 48 Dighton St. Brighton, MA 02135 ▲ (617)254-1506

Mass. residents add: *$1.50 or **$2.00 sales tax
Dealer inquiries welcome

Circle 348 on Reader Service card.

COLOR RIBBONS & PAPER

Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

Ribbons: Price Each	Black	Color	T-Shirt Ribbons
Brother M1109	$4.95	$5.95	$7.00
Citizen 200/GSX 140	4.50	5.50	7.50
Citizen GSX 140 4 color	—	25.50	—
Okidata 182/192	5.50	7.50	6.00
Panasonic 1190/1124	5.75	7.75	—
Seikosha SP800/1600	5.00	6.00	7.50
Star NX1000	3.75	4.75	6.75
Star NX1000 4-color	—	6.75	10.00

T-Shirt (Heat Transfer Ribbons)
Colors: Black, Red, Blue, Green, Brown, Purple, Yellow

Color Paper	200 shts assorted	
Bright Pack:	91/2x11	$10.90/pk
Pastel Pack:	91/2x11	$8.90/pk
Color Certificate Paper:	100 sheets	$9.95/pk
Color Banner Paper:	45 ft/roll	$8.95/roll

Min. orders: $25.00. Minimum S&H: $4.00. Call for other ribbons and supplies. Price & spec. are subject to change w/out notice.

RAMCO COMPUTER SUPPLIES
PO Box 475, Manteno, IL 60950 U.S.A.
USA 800-522-6922 or 815-468-8081
(Canada) 800-621-5444

Circle 267 on Reader Service card.

AudioLink

16-bit Linear Stereo Audio Processor with Sound Sampling Capabilities



Beta Unlimited
87 Summit St. Brooklyn, NY 11231 / PHONE 718-852-8646

Circle 334 on Reader Service card.

LAST LICKS

Ask Agnus

The lady with all the answers is back by popular demand...with a little help from Steve Pietrowicz.

Q: I have been thinking of getting a laser printer for my Amiga. My husband says they're dangerous. What do you think?
Ima Askin
High Bloomers, Vermont

A: Dear Ima:
Laser printers are pretty safe now, but at first they were risky. In one Florida case, the laser shot out the side of one and vaporized a pink flamingo. The government, seeing great potential in this, gathered these early models together and shot them into space as sort of an unofficial Star Wars program. If the Earth is attacked by flamingos, you can rest assured we're safe.

Q: I own a hair salon and have been looking for software to help me out at work. What can you recommend?
Buffy Nails
Youresoakinginit, Arizona

A: Dear Buffy:
You're in luck! The makers of Scalp-Animate 3-D have just released "Wigs in Space," a program that lets you construct any type of hair style you wish, all in 3D! They even include some well-known faces and various sample hair styles. (An add-on module is planned for complexion textures.) Now you can answer the question on every hairstylist's mind: What does Ron Reagan look like with a beehive hairdo?

Q: I've tried to read and write IBM $3\frac{1}{2}$-inch disks in my Amiga drives, but they don't work. I know that there is software available to read and write IBM disks, but why can't the Amiga handle those disks without that software?
Balou Suitt
Dongle, New York

A: Dear Balou:
That insidious code actually fools your Amiga into thinking that an IBM disk is no different from any standard Amiga-formatted disk. That code is so noxious that if your Amiga were exposed to it without some sort of protection, it would spit the disk out so hard and fast that it would be driven into the wall behind you. (Not to mention what it could do to you.) I heard about one individual who was inadvertently exposed to this media without eye protection for a little too long, and now the only job he can hold down is testing the springs on those little metal doors on 3.5" disks.



"OH, SURE! LEAVE IT TO THE FORESTRY SERVICE TO START TALKING AMIGAS JUST WHEN I GET THE MAINFRAME UP AND RUNNING."

Q: Some of the programs I use flicker like crazy. I know I can buy a special card and a multisync monitor, but before I do, I'd like to know if there is another way to stop this flicker. Please help!
Dennis Drill
White Knuckles, Illinois

A: Dear Dennis:
I've had an Amiga since it first came out, and I found a quick and easy solution to your problem. I bought four Slinky springs from a toy store and connected them all between my computer chair and the ceiling. Now, when I sit in the chair and bounce, the flicker just seems to go away! Be careful, though. Once when I was playing an exciting arcade game, one of the springs broke, and I was shot through the window.

Q: I just wanted to let you and everyone else know that ABCDEFG just came out with a new product for the farm: the EIEIO board. With this new board, I just set up my A3000 in the barn, interface my cow to the milking machine, and let 'er go. The driver software really keeps Bessy humming. Now we're really in sync!
Lon Mower
Hamhock, Iowa

A: Dear Lon:
Thanks for the information. Here's another tidbit for you: ABCDEFG just announced the SX-1000 tanner, an Amiga-compatible tanning booth. If you liked the EIEIO board, you'll love this! The cost is negligible; they'll just take it out of your hide later.

Ear to the Wall

Would You Believe It? In a previous issue, we stated that Brown-Wagh was offering free upgrades to Pen Pal. This is incorrect. Upgrades (for a fee) may be obtained from Pen Pal's developer, Softwood, who is no longer associated with Brown-Wagh. Any questions regarding Pen Pal may be directed to Softwood, PO Box 50178, Phoenix, AZ 85076.

Also on the move. Microbotics reports an expanded operation at a new location: 1251 American Pkwy., Richardson, TX 75061, 214/437-5330.

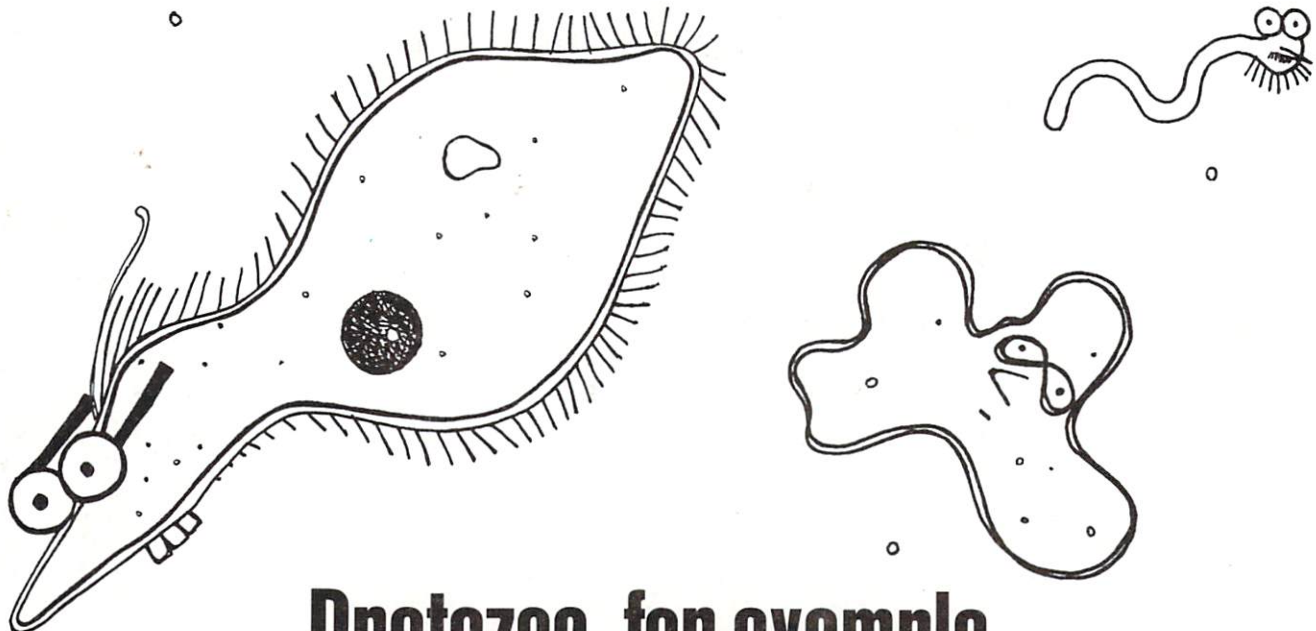
Price Slashing. Micro-Systems Software has lowered prices on all its products by one-third for an undetermined amount of time, according to a company representative. Sale items include excellence!, from \$299.95 down to \$199.95; The Works! Platinum, from \$299.95 to \$199.95; Online! Platinum, from \$99.95 to \$69.95; and Scribble! Platinum, from \$149.95 to \$99.95.

Attention dealers: The *AmigaWorld* Marketing Dept. has redesigned and improved the *AW Dealer Report*. If you wish to receive this newsletter, call Wendie Marro or Laura Livingston at 603/924-9471, or fax your request to 603/924-4066.

To Have and to Hold. VidTech extended its ScanLock initial-purchase warranty to one year. It includes support via an 800 number in the US.


GOLDENIMAGE®
PRODUCTS
They add POWER to your AMIGA®...
RC - 2000
2 - 8 MB RAM with 2 MB ON-BOARD
RC - 500
512 KB RAM with
CLOCK/CALENDAR
AMIGA
3A - 1
3½" FLOPPY
DISK DRIVE
3A - 1D
3½" FLOPPY with
LED TRACK DISPLAY
GI - 1000
FULLY OPTICAL MOUSE
GI - 500
OPTO-MECHANICAL MOUSE
JS - 105 - 1M
HAND SCANNER 400 DPI / 32 GRADUATION
800-356-5178
Inside CA 714- 633-1026
Distributed by
KONYO International, Inc. / FAX 714-633-5339
AMIGA® AND GOLDENIMAGE®
THE PERFECT COMBINATION
Amiga is a registered trademak of Commodore - Amiga, Inc.
Circle 117 on Reader Service card.
Dealer Inquiries Invited

We're not saying everyone should own a Digi-View Gold...



Protozoa, for example, have very little need.

Only one product has captured the imagination of Amiga users around the world: Digi-View Gold. It's the most award winning, best-selling and most used Amiga hardware product of all time. When Amiga owners want to digitize graphics they use Digi-View Gold. Period. In fact, we've probably sold more Digi-Views than any other digitizer on any PC in history.

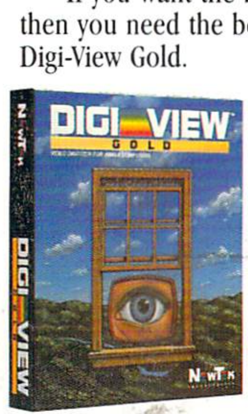
Here's your chance to bring the world into your Amiga. Simply focus your video camera on any object or picture, and in seconds Digi-View Gold turns it into Amiga graphics that glow with vibrant color and stunning clarity. Whether you are creating graphics for desktop publishing, presentations, video, or just for fun, Digi-View Gold makes dazzling images perfectly simple.

Digi-View Gold is designed specifically for the Amiga 500 and 2000, and plugs directly into the parallel port. With complete software control of color saturation, brightness, sharpness, hue, resolution, and palette, advanced image processing is as easy as adjusting the controls on your television.

Only Digi-View Gold:

- Has exclusive Dynamic HiRes mode for 4096 colors in HiRes
- Digitizes in all Amiga resolution modes from 320x200 up to 768x480 (full HiRes overscan)
- Uses 2 to 4096 colors (including halfbrite)
- Digitizes in 21 bits per pixel (2.1 million colors) for the highest quality images possible
- Has advanced dithering routines that give an apparent 100,000 colors on screen simultaneously
- Comes with an icon driven slideshow program for presentations using both IFF and Dynamic images
- Offers an unprecedented lifetime warranty and toll-free support line

If you want the best pictures possible on your Amiga, then you need the best selling video digitizer of all time: Digi-View Gold.



The Amiga Video Digitizer

Only $199.95

Digi-View Gold is available now at your local Amiga dealer. Or call **1-800-843-8934** or **1-913-354-1146**

NEWTEK
INCORPORATED

Requires standard gender changer for use with Amiga 1000. Dynamic HiRes requires 2 megs of RAM. Digi-View Gold is a trademark of NewTek, Inc.

Circle 119 on Reader Service card.